



Brand Equity: a probabilistic approach on brand preference

By

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Bio

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Abstract

The issue of Brand Equity has attracted much attention, both from an academic and a business management point of view. However, despite the unanimous opinion that the Brand Equity is an important intangible asset, there is no consensus even on its conceptualization, nor on how this intangible asset should be measured.

This paper aims to identify explanatory factors from the consumer's point of view which have a greater influence (positively or negatively) on the probability of choosing a brand, which is used here as a proxy for Brand Equity.

The study focuses on a category of FMCG, through four widely known beer beverages brands: *Sagres*, *Super Bock*, *Heineken* and *Carlsberg*.

In order to achieve the proposed objective, the study relies on a reference conceptual model, being adapted to the context of this study. This study considers four brands of the same category, in order to understand whether the explanatory factors of the probability of choosing a brand are transversal between competing brands. In addition, applying a methodology uncommonly used in this research field brings originality to the research project.

For the methodology of the research, a survey was published directed to consumers (current and potential) of beer, residents in Portugal.

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From the analysis of the results, it was concluded that there are significant differences between the brands in respect of the factors explaining the probability of choosing a brand.

This study aims to contribute to a better academic and management knowledge on the topic of research, in particular by introducing a model that has not been applied in this research area.

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Introduction

1.1. Research topic

The research topic chosen for this dissertation is entitled “Brand Equity: a probabilistic approach on brand preference”.

The research project aims to contribute to a better understanding of the measurement models of brand equity. As we will see below, there is no consensus either on the concept of brand equity, nor on how this value can and should be measured. This study aims to contribute to this issue, trying to adopt a holistic and integrated view of the existing measurement models. After that, it will be presented and tested a model that aims to study factors that influence (positively and negatively) the choice of a particular brand and if they are identical between various brands belonging to a product category or, in contrast, show significant differences between brands.

1.2. Pertinence of the topic

The importance of the concept of brand equity and, more particularly, its measurement is undoubtedly one of the most pertinent topics in the field of marketing, for both for scholars and for practitioners (Davicik *et al.*, 2015).

Indeed, it is currently widely accepted that brands are one of the most valuable intangible assets that companies have (de Oliveira *et al.*, 2015). Thus, it becomes vital to know measuring and monitoring brand equity over the time.

Several perspectives and models have been developed and discussed in the literature and by professionals.

In fact, there is no universally accepted theoretical basis in the field, in terms of brand equity concept nor to its measurement. Although the business world recognizes the estimation of brand equity as an important marketing activity, this estimation and the quantification of the return on marketing activities in financial terms it remains the major challenge for brand managers (de Oliveira *et al.*, 2015).

The need to develop a measurement model of brand equity uniformly well-accepted would interest to different groups of people: marketers, who have a great interest in demonstrating the value of branding in clear financial terms; scholars who are under

pressure to develop a theoretical and methodological basis universally accepted; accountants, especially in cases of mergers and acquisitions; shareholders and financial analysts. In other words, it would be important to develop a model that integrates financial perspective on the consumer-based perspective, that is, a holistic approach (de Oliveira *et al.*, 2015).

1.3. Aims, Methodology and Object

This dissertation discusses the concept of brand equity and, more specifically, the existing problems surrounding its measurement. This study has as major aim to present, in a first phase, a current status of the main conceptualizations and existing measurement models, focusing on its advantages and limitations, as well as the current situation around the attempt to obtain an approach that considers the brand equity and its measurement of an integrated and globally well accepted way. Moreover, in a second phase will be presented and tested a model to evaluate which factors most influence have on the probability of choosing a brand (considered in this study as proxy of brand equity) and how these can vary between competing brands.

Given these objectives, this dissertation will have as first phase a theoretical framework of this issue by the relevant literature review; and a second phase with a practical component. For this purpose, the methodology applied in this study begins with carrying out questionnaire surveys to the population residing in Portugal, over 18 years, being used for this purpose a convenience sample. The construction of this survey will be based on scales developed by other researchers, and adapted to ensure perceptibility by respondents and adjusted to the object of study. Later, it estimated the proposed model, for each brand, and analyzed the results.

As object of study will be used a product category of FMCG, whose brands are widely known and acquired with relative frequency. Additionally, it is a category with a finite number of brands on the market, making it easier to get maximum representation of brands in this category. The national beer market represents currently about one billion euros, (sale price in retail, according to data provided by an expert in the area, for 2015), and the brands that will be considered in this study represent about 92.2% of this value.

The selection of these brands was made according to their representation in the national market (combined constitute almost all the national beer market) and the fact that they

are generally known of the target population and easily accessible. This study will focus on the brands: Sagres, Super Bock, Heineken and Carlsberg.

1.4. Dissertation structure

This dissertation will be structured in two parts. In the first part will be presented the review of relevant literature around the theme of conceptualising, dimensions and measurement models of Brand Equity. As a bridge to the second part, a status point will be made on the problem of consensus on the measurement models of brand equity and on attempts to develop a holistic model that is well-accepted globally. The second part will present the proposed model, methodology, measurement scales and the collection and processing of empirical data. Later, will be analyzed and discussed the results. Finally, the main conclusions will be presented, as well as academic and managerial contributions resulting of this investigation, and referred to the main limitations and suggestions for future research.

2. Literature Review

2.1. Brand Equity

2.1.1. Introduction

We are currently living in an era where we are every day absorbed by brands. Thus, brands and brand management are an increasingly significant subject for both companies and the academia, often considering brands as valuable intangible assets. This drives researchers and managers to pursue further endeavor in the field, generating some notable academic articles such as Ansekmsson *et al.* (2007), Chernatony and Riley (1998), Lencastre and Côte-Real (2010), Aaker (1991) and Erdem *et al.* (2006).

This chapters aims to revise the current literature from the main authors with interest in the subject, focusing on the main aspects related with Brand Equity, ranging from main concepts and definitions to dimensions, measures and valuation.

2.1.2. Brand Equity Concepts

“Before valuing any asset, we must first define it” (Salinas, 2009).

Specifying definitions especially relevant when we are talking about brands and its equity. Defining an asset before evaluating it helps to understand the scope of the evaluation model to be applied. Scholarly literature on the matter shows that there is no consensus on the meaning of brand equity nor the methods of measuring the value of a brand (Salinas, 2009). Winters (1991) argues that “...if you ask 10 people to define brand equity, you are likely to get 10 (maybe 11) different answers as to what it means” (Salinas, 2009).

Modern marketing theory has recognized brand equity paradigm as a key strategic asset for organizations (Davicik *et al.*, 2015). Over recent years, brand equity has become more important to understanding the objectives, strategies and return of the holistic impact of marketing (Christodoulides & de Chernatony, 2010). Indeed, brand equity is a concept that gets a special relevance from the 1980s and, since then, has been attracting attention from both managers and academics (Aaker, 1996; Christodoulides & de Chernatony, 2010; Keller & Lehmann, 2006; Yoo & Donthu, 2001). The series of brand acquisitions in the late 1980s showed the hidden value of companies with strong brands, and generated growing interest in brand valuation (Salinas, 2009). Thus, brands are critical assets in

mergers and acquisitions (Cem Bahadir, Bharadwaj, & Srivastava, 2008). In fact, *Thomason Reuters* and *Interbrand* reported that in the 1970s as much as 95% of the average corporation's value comprised of tangible assets. However, this has reduced to 75% today. This shows that intangible assets such as brands, has recently increased its share in firm value (Lee, Yang, Mizerski, & Lambert, 2015). This trend is also noticeable in consulting firms practices, which have been actively developing their own brand equity valuation methods (Christodoulides & de Chernatony, 2010).

In contrast and despite being substantial, the literature on brand equity is largely fragmented and inconclusive in terms of conceptual foundations, sources, essence and measures (Christodoulides & de Chernatony, 2010).

According to Agarwall & Rao (1996) and Erdem & Swait (1998), generalized theoretical instruments that can assert an unanimous definition on Brand Equity have not yet been developed.

Nonetheless, studying the phenomenon of Brand Equity through different perspectives in a complementary fashion rather than a competitive nature has been gathering some consensus in the field.

Table 1 shows some of the most prominent definitions of Brand Equity, where we can see that they are, in some cases, very discrepant. There are purely financial ideologies, and others focused on the consumer. Thus, the literature suggests the lack of a common and shared views on the definition of Brand Equity (Christodoulides & de Chernatony, 2010; Yoo & Donthu, 2001).

Table 1: Brand Equity Definitions

Author	Definition
Srinivasan (1979)	the component of all preferences that are not explained by objective measurements of the attributes of products
Leuthesser (1988)	the set of associations and behaviors on the part of the brand's consumers, channel members and related corporations that allows the brand to gain higher volume and higher margins, which would not be possible without the brand name
Farquhar (1989)	Brand equity represents the added value that accrues to the organization, thus rendering the development of strong brands as imperative for organizational strategic thinking
Aaker (1991)	Set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers
Axelrod (1992)	Additional amount that consumers are willing to pay for a product with brand, instead of a physically comparable but without brand
Swait <i>et al.</i> (1993)	Money equivalent of total utility that the consumer associates to a brand
Guillaume (1993)	Incremental cash flow resulting from the fact of the product to be a branded product and not a free brand name product
Simon & Sullivan (1993)	Incremental discounted future cash flows that would result from a branded product revenue, in comparison with the revenue that would occur if the same product did not have the brand name
Lassar <i>et al.</i> (1995)	the value of the perceived utility and the desire that the brand name gives the product
Aaker (1996)	set of assets and liabilities related to the brand - name or symbol - that adds or subtracts value to the products of a company or to its consumers
Keller (1998)	The differential effect of brand knowledge on consumer response to the marketing of the brand
Marketing Science Institute	Set of associations and behaviors on the part of a brand's consumers, channel members and parent corporation that enables a brand to earn greater volume or greater margins than it could without the brand name and, in addition, provides a strong, sustainable and differential advantage

Motameni e Shahrokhi (1998)	set of brand assets linked to the brand name and symbol that adds or subtracts the value provided by a product or service to a firm and / or the company's consumers
Yoo e Donthu (2001)	differential response of consumers between a brand and a product unbranded where both have the same marketing stimuli and the same attributes
Ambler (2003)	Repository of future profits or cash flows that results from past marketing investment
Christodoulides & de Chernatony (2010)	Set of perceptions, attitudes, knowledge, and behaviors on the part of consumers that results in increased utility and allows a brand to earn greater volume or greater margins than it could without the brand name

Source: Adapted from Rodrigues (2008).

As shown by Table 1, definitions about brand equity are very wide, that is, we can see from purely financial perspectives, to focus only on consumer perspectives and yet some authors choose to focus on the consequences/antecedents of brand equity. The same conclusion can be drawn by looking at the Figure 1.

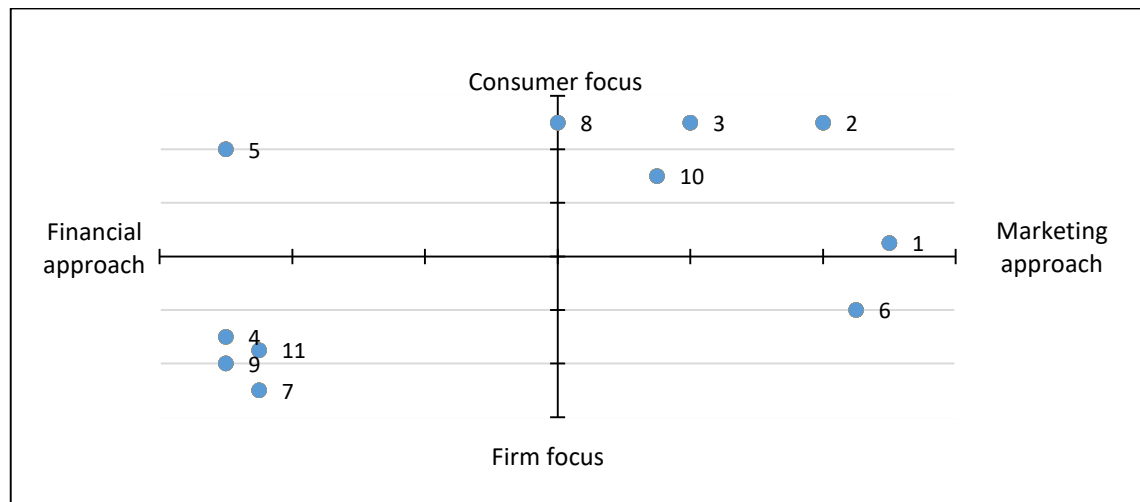


Figure 1: Brand equity position matrix

Source: Adapted from Davcik *et al.* (2015)

Where: 1 – Farquhar (1989); 2 – Aaker (1991); 3 – Keller (1993); 4 – Simon and Sullivan (1993); 5 – Kamakura and Russel (1993); 6 – Yoo *et al.* (2000); 7 – Ailawadi *et al.* (2003); 8 – Srinivasan *et al.* (2005); 9 – Ambler (2008); 10 – Keller and Lehmann (2003, 2006); 11 – Raggio and Leone (2009)

According to Farquhar (1989), although there is no universally accepted definition of brand equity, there is some consensus in that brand equity indicates the added value endowed by the brand to the product.

2.1.3. Brand equity measurement approaches

Since the concept began being actively discussed in the field, there has been many attempts to formulate a method of measuring and estimating the Brand Equity. As it was previously discussed in this chapter, a number of authors have published articles that focus on the need of defining and measuring Brand Equity for a better management of it (Rodrigues, 2008)

According to Seetharaman *et al.* (2001), there are four basic approaches to measuring brand equity: cost, market, income and formulary.

2.1.3.1. Cost-based approach

In the cost-based approach, the brand is valued by considering the costs involved in the development of the brand (brand acquisition, creation or maintenance). The major problem with this approach is that all costs related to the brand should be included thus creating a difficult task which consists in identifying the costs that are not directly attributed to the brand, but that are linked to the support of it. After determining the historic costs related with the brand development, it is necessary to consider the discount rates that should be applied in order to obtain the current value (Rodrigues, 2008).

2.1.3.2. Market-based approach

The market-based approach considers recent transactions (sales, acquisitions, licenses) that have involved similar brands, and for which data regarding the transaction price is available. This approach is also known as the comparable approach to similar brand transactions. The problem with this method is that it requires the determination of the market value for the brand (Rodrigues, 2008).

2.1.3.3. Income-based approach

The income-based approach focuses on the future potential of the brand. This method requires the determination of the future net income, profits or cash flow attributable to the brand over its expected remaining useful life, and discounting or capitalizing them to present value (Rodrigues, 2008).

2.1.3.4. Formulary approach

Lastly, the approach using formulas involves multiple criteria to determine the value of the brand. Although similar in many ways to Income-base approaches, they're separately included into their own category since they are commercially used by consulting firms and other organizations. This approach is sustainable with the internal and external management of financial reporting. The formulas should be a profit indicator of the brand. In order to obtain the brand profit, several factors are considered regarding the brand identity. These factors will contribute to a valuation multiplier (Rodrigues,2008).

2.1.4. Conclusion

In conclusion, there is no consensus within the literature regarding the concept of brand equity.

In addition, there exists several approaches of measuring brand equity, all of which can be categorized into two main perspectives: a customer-based brand equity (CBBE) and a firm-based brand equity (FBBE) (Rodrigues, 2008).

Considering these details, the following literature will focus on the two main perspectives regarding the measure of brand equity, which will offer an overview over the main constructs and methods currently used in the field.

2.2. Brand Equity Measurement

2.2.1. Introduction

There is no consensus in the literature about how to develop a unique measure of brand equity (see Appendix I) (Davicik *et al.*, 2015). Indeed, despite a consensus among academics and practitioners in terms of the importance of brand equity, a uniformly accepted estimation model has yet to emerge. However, two brand equity research streams are dominant: the customer-based and firm-based perspectives (Davicik *et al.*, 2015).

Within the CBBE perspective, we can still distinguish between direct and indirect methods, as we can see in the diagram below (Christodoulides & Chernatony of 2010). Some authors focus on the firm (or financial) perspective of brand equity (Farquhar *et al.* 1991; Simon & Sullivan, 1993), while others focus their attention on customer-based perspective (Aaker, 1991; Keller, 1993; Yoo & Donthu, 2001; Vasquez *et al.*, (2002); in Chernatony *et al.*, 2004; Pappu *et al.*, 2005; Christodoulides *et al.*, 2006).

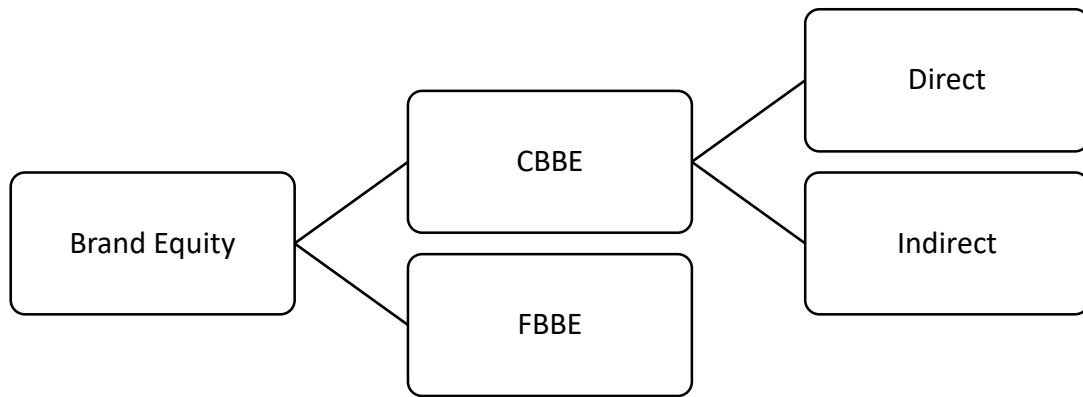


Figure 2: Brand Equity Perspectives

Source: Adapted from Christodoulides & Chernatony (2010)

2.2.2. Customer-based Brand Equity (CBBE)

2.2.2.1. Conceptualization

The concept of CBBE discusses the brand equity from the consumer perspective. According to Christodoulides & de Chernatony (2010), the conceptualizations by CBBE perspective derive essentially from cognitive psychology (the dominant stream) and information economics. The first one is endorsed by renowned authors such as Aaker (1991) and Keller (1993).

For Aaker (1991), brand equity is defined as a set of assets and liabilities attached to a brand, including its name and symbol, which either add or reduce the perceived value of a product or service.

In turn, Keller (1993) approached the CBBE strictly from a consumer psychology perspective, defining it as *“the differential effect of brand knowledge on consumer response to the marketing of the brand”* (Christodoulides & de Chernatony, 2010).

According to this definition, a brand has a positive (or negative) value depending if the consumer reacts more (or less) favorably to the marketing mix of a known product than to the marketing mix of an identical product unbranded. For Keller (1993), brand knowledge is a key antecedent of CBBE, which can be split into two components – brand awareness and brand image (associations).

At the same time, brand equity research supported in information economics is based on the imperfect and asymmetric nature of the markets, which produces uncertainty in consumers' minds. According to Erdem *et al.* (2006), brand names act as signals to consumers. Thus, a credible brand signal creates customer value because it reduces the risk and the information search costs, as well as develops favorable attribute perceptions. According to this approach, the CBBE is defined as the value of a brand signal to consumers (Erdem & Swait, 1998).

Christodoulides & de Chernatony (2010) suggest a definition of CBBE which includes elements of both perspectives. Thus, they define CBBE as *“a set of perceptions, attitudes, knowledge, and behaviors on the part of consumers that results in increased utility and allows a brand to earn greater volume or greater margins than it could without the brand name”*.

2.2.2.2. Measurement

One can find many different models for measuring Brand Equity, which mostly focus on determining one's value through its determinants.

Despite several authors, such as Aaker (1991) and Keller (1993), have conceptualized brand equity, they never operationalized a scale for its measurement. This led to a series of methodologies to quantify this asset considered highly intangible, but most of them employ complex statistical procedures, making them difficult to understand and use (Christodoulides & de Chernatony, 2010).

Methodologies developed under the operationalization of CBBE can be classified as direct or indirect. Direct approaches attempt to measure the phenomenon directly, by focusing on consumers' preferences (e.g. Park & Srinivasan, 1994) or utilities (e.g. Kamakura & Russell, 1993; Swait *et al.*, 1993), while indirect approaches measure brand equity through its demonstrable manifestations (e.g. Yoo & Donthu, 2001; Pappu *et al.*, 2005) (Christodoulides & de Chernatony, 2010).

Direct approaches

Fundamentally, what these studies are trying to reach is a separation of the value of the brand from the value of the product (e.g. by applying the multi-attribute model). These approaches follow a more traditional vision of the concept of Brand Equity. This point of view separates the usefulness that the product offers from those that are susceptible to be added from the brand itself, or in other words, believing that the brand enhances the product's value beyond its functional utility.

Srinivasan (1979), Park and Srinivasan (1994) and Jourdan (2002) use the multi-attribute model as a common starting point for measuring CBBE. Srinivasan (1979) defines brand equity as *"the component of a brand's overall preference that is not explained by the multi-attribute model"* (Christodoulides & de Chernatony, 2010).

In light of this definition, Srinivasan (1979) measures brand equity by comparing observed preferences based on the actual choice with consumer preferences from a multi-attribute conjoint analysis. The estimation of brand equity that result from this method occur, at best, to the segment level. Moreover, this approach does not clarify the sources of brand value. Later, Park and Srinivasan (1994) advanced the measurement of brand

equity on an individual level, which they defined as “*the difference between an individual consumers’ overall brand preference and his or her multi-attributed preference based in objectively measured attribute levels*” (Christodoulides & de Chernatony, 2010).

Park and Srinivasan (1994) also disaggregate the CBBE into two parts: a component based on consumers’ evaluations about the physical characteristics of the brand and one based in the symbolic associations linked to the brand. Jourdan (2002) notes that the difference of utility, implicit in the Park and Srinivasan (1994) definition of brand equity may not entirely be attributable to the brand because part of it is due to measurement error. Taking into account this, Jourdan (2002) defends an error component. This change resulted in improved levels of reliability and validity of the measurement of brand equity. Despite the advantages of this method, the complexity of their experimental design translates into little managerial value (Christodoulides & de Chernatony, 2010).

In the same line of thought, studies of other authors on the measurement of CBBE are presented below. Leuthesser *et al.* (1995) assumes that the personal evaluation of a brand is always biased because consumers are more inclined to choose the brands they know. According to the authors, it is this distortion that forms the brand equity base. This method does not provide any information on the sources of CBBE and therefore is of little value to brand managers. In addition, this method does not take into account the part of CBBE which depends on the associations linked to the brand. Finally, the method does not overcome the limitations of previous methods which rely heavily on statistics, making it difficult to use in practice (Christodoulides & de Chernatony, 2010).

Kamakura and Russell (1993), in contrast to previous studies, which focus on preferences, analyze the actual purchase behavior of consumers through a segmentwise logit model. Thus, CBBE is measured as “*the implied utility or value assigned to a brand by consumers*” (p.10). The authors decompose Brand Value in tangible and intangible components and proposes Brand Value and Brand Intangible Value as two alternative measures of brand equity. Like Srinivasan (1979), this approach does not evaluate CBBE to the individual consumer level. The method has the advantage of reflecting the actual behavior of consumers as opposed to preferences. Finally, the method assumes that the separability of the brand is possible, a position that is disputed by some researchers such

as Barwise *et al.* (1990) and Ambler & Barwise (1998) (Christodoulides & de Chernatony, 2010).

The approach adopted by Swait *et al.* (1993) uses the entire utility value linked to a brand instead of isolating their specific parameters. Based on this, they propose a new measure of CBBE called "*Equalisation Price*" (EP), which includes "*the monetary expression of the utility a consumer attributes to a bundle consisting of a brand name, product attributes and price*". Based on a hypothetical choice and additional information (relating to consumers' purchases, use of the product, image and socio-demographics), the EP is then calculated using a multinomial logit model. This is the hypothetical price at which each brand would have the same market share in that consumers' purchases (Barwise, 1993). This instrument has the advantage of identifying the sources of brand associations, incorporating a number of qualitative variables related to symbolic associations, and determining importance weights in the function of consumer utility, as well as the fact that it allows to calculate CBBE at the individual level. However, the model requires that all consumers have identical preferences, making the method inappropriate to markets characterized by heterogeneous consumer choice (Christodoulides & de Chernatony, 2010).

Indirect approaches

Compared to direct approaches, indirect approaches to measuring CBBE take a more holistic view of brand and try to measure brand equity through its manifest dimensions or through an outcome variable (e.g. premium price) (Christodoulides & de Chernatony, 2010).

Lassar *et al.* (1995) defined the CBBE as "*the enhancement in the perceived utility and desirability a brand name confers on a product*". Based on a previous study by Martin and Brown (1990), the authors proposed five dimensions of CBBE: performance, value, social image, trustworthiness and commitment (Christodoulides & de Chernatony, 2010).

Taking into account the complexity of previous measurement techniques of brand equity, Lassar *et al.* (1995) tried then develop a simple tool that allowed managers easily monitor brand equity through its dimensions. The authors developed a Likert-type CBBE scale and their metric can be applied to various product fields. However, this CBBE scale focuses exclusively on associations and excludes significant behavioral components of

brand equity. Additionally, this scale was validated with a convenience sample of 113 consumers, which is seen as inadequate for confirmatory factor analysis (Christodoulides & de Chernatony, 2010).

Similarly, Vasquez *et al.* (2002) define CBBE as “*overall utility that the consumer associates to the use and consumption of the brand; including associations expressing both functional and symbolic utilities*”. This definition is based on the utility obtained by consumers after the purchase of a brand (ex-post utilities). Their empirical study found the existence of four dimensions of brand utilities: product functional utility, product symbolic utility, brand name functional utility and brand name symbolic utility. The results showed that product and brand utility maintain discriminant validity, suggesting that consumers do not see the two entities (i.e. product and brand) as identical. However, due to the strong inter-correlations between dimensions is necessary does not consider the two entities as completely independent. This scale presents as main advantage the ease of application, compared to previously reported methods involving complex statistical models; clarifies the sources of brand equity and allows measurement at the individual level. On the other hand, this scale was calibrated only in the athletic shoes sector and, as such, some adjustments are needed order to be applied in other contexts. Lastly, this method neglects significant ex-ante brand utilities. Later, Koçak *et al.* (2007) replicated the results de Vazquez *et al.* (2002) to determine whether its scale could be applied to a different cultural environment (i.e. Turkey). The results showed that the scale developed by Vazquez *et al.* (2002), was not suitable for the Turkish sample. This led Kozak *et al.* (2007) to conclude that the consumer can reach different brand evaluations as a result of different culture conditions (Christodoulides & de Chernatony, 2010).

Yoo and Donthu (2001) sought to develop an individual-level measure of CBBE that is reliable, valid and supported in the theoretical dimensions presented by Aaker (1991) and Keller (1993). Their method consists of ten items, which reflect the dimensions of CBBE: brand loyalty, perceived quality and brand awareness / associations. To assess the convergent validity of MBE (Multi-dimensional Brand Equity), Yoo and Donthu (2001) also developed a unidimensional direct measure of brand equity, OBE (Overall Brand Equity), and was found a strong and significant correlation between the two measures (Christodoulides & de Chernatony, 2010).

Within the indirect approaches, this is the study that has the most strengths and fewest weakness. Firstly, the adoption of a scale that allows the simultaneous use of samples from several cultures suggests that this is culturally valid. Moreover, the scale is applicable to various product categories with no need to be adjusted. It is also an easy instrument to apply, making it more useful for management, and allows the measurement at the individual consumer level. Finally, it was subject to a rigorous multi-step validation process. The main limitation of Yoo and Donthu's (2001) CBBE scale is that brand awareness and brand associations, two theoretically distinct constructs of brand equity have joined in one dimension. Although the two constructs are correlated, both Aaker (1991) and Keller (1993) distinguish between brand awareness and brand associations. According to Aaker (1991), brand awareness must precede brand associations. The two dimensions are not synonymous, since it can be aware of a brand without having associations on the brand in our memory.

Another way to indirectly measure the CBBE is through an outcome variable, i.e. price premium. This method calculates the additional profit that is generated as a result of the differential selling price between a branded and a generic product (Barwise *et al.*, 1989).

Other relevant study about the dimensionality of brand equity was presented by Buil *et al.* (2008), who compared data collected from consumers in the UK and Spain. The structure of CBBE that was analyzed (brand awareness, perceived quality, brand loyalty and brand associations, which are decomposed into perceived value, brand personality and organizational associations) was supported in both countries.

On the next subdivision, a brief presentation of Aaker and Keller's models will be made. Both authors are vastly referred within the literature (Netmeyer *et al.*, 2004; Yoo *et al.*,2000; Yoo and Donthu, 2001), while showing very convergent perspectives on the subjects. Additionally, their efforts contributed to further development of new research and valuation models within the field of Brand Equity.

2.2.2.3. Keller's model

In Keller's opinion (2003), brand equity is equivalent to the multidimensional construction of the brand's knowledge. In the author's model, Keller argues that the brand's power resides within the consumer's mind. For Keller (1993), Brand Knowledge

is a key antecedent of CBBE, which can be divided into two components – brand awareness and brand image (associations).

Keller (1993) also believes that brand awareness directly influences the purchase decision, since it increases the chance of the brand being selected. Besides, it also influences the formation and strength of associations. Awareness reflects on the capacity that the consumer has of recalling and recognizing the brand, which in turn is also derived of the consumers' previous experience with the brand.

As regards the second component of brand knowledge, brand image, this is composed of brand associations which in turn may differ in terms of their strength, favourability and uniqueness, existing brand equity when the consumer is familiar with the brand and his memory has favourable, strong and unique associations (Keller, 1993). Finally, associations may be classified as: attributes, benefits and attitudes.

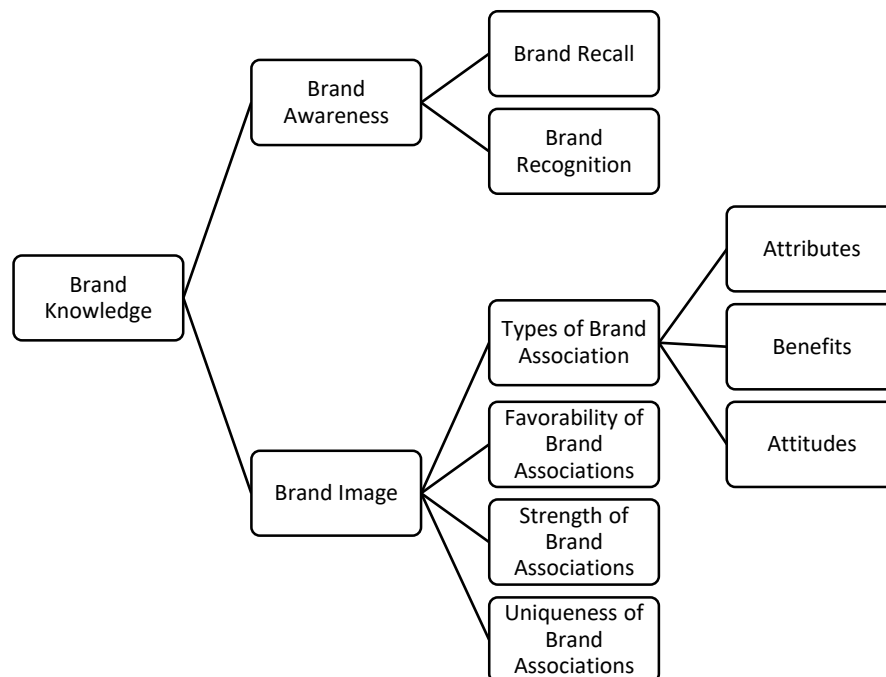


Figure 3: Conceptual Model

Source: Keller, Kevin Lane (1993), "Conceptualizing, Measuring, and Managing Customer-Based Brand Equity", Journal of Marketing, Vol. 57, Nº 1, pp. 7.

2.2.2.4. Aaker's model

Similar to Keller (1993), also Aaker (1991) defines brand equity as a multidimensional construct, integrated in a number of assets and liabilities that add value to the brand, both for the company and the consumer.

To Aaker (1991) the conceptual dimensions of brand equity are: brand awareness, brand associations, perceived quality, brand loyalty, and other brand assets such as patents and trademarks. The first four dimensions represent consumer perceptions and reactions to the brand, while the latter dimension is not pertinent to CBBE (Christodoulides & de Chernatony, 2010).

In his model (Aaker, 1996), loyalty is a central dimension of brand equity as it reflects in a profit stream. Thus, brand loyalty is related with the consumer connection to a brand, taking into account the probability of being replaced by other brands. Awareness, another dimension of brand equity, concerns the power of the presence of the brand in the consumer's mind, including the ability that a consumer has to recognize or remember a brand. In turn, the perceived quality is defined as the perception the consumer has on the overall quality of the product or related superiority over similar products. The final dimension, associations, is something attributed to memory and is the basis of the brand image, representing perceptions that may or may not reflect in an objective reality.

At a later stage, Aaker (1996) has developed ten measures of brand equity. These were grouped into five categories: the first four represent the dimensions of brand equity and consist of information obtained directly from consumers; The last category includes two sets of market behaviour measures which represent the information obtained directly from it.

Loyalty Measures	<ul style="list-style-type: none"> •Price Premium •Satisfaction/Loyalty
Perceived Quality/Leadership Measures	<ul style="list-style-type: none"> •Perceived Quality •Leadership/popularity
Associations/Differentiation Measures	<ul style="list-style-type: none"> •Perceived Value •Brand Personality •Organizational Associations
Awareness Measures	<ul style="list-style-type: none"> •Brand Awareness
Market Behavior Measures	<ul style="list-style-type: none"> •Market Share •Market Price and Distribution Coverage

Figure 4: The Brand Equity Ten

Source: Aaker, David A. (1991), "Measuring Brand Equity across Products and Markets", California Management Review, Vol. 38, N° 3, pp. 102-120.

Finally, Aaker (1991) highlights the importance of these different dimensions in the measuring brand equity, which depends on various factors such as the degree of user involvement and product category.

2.2.2.5. Dimensions of Brand Equity

In this subdivision, a detailed presentation will be made regarding the most mentioned and consensual dimensions in the literature (brand awareness, brand associations, perceived quality and loyalty) (Keller, 1993; Srinivasan *et al.*, 2005; Aaker, 1996; Yoo *et al.*, 2000; Yoo Donthu, 2001; Netemeyer *et al.*, 2004; Simon and Sullivan, 1993; Buil *et al.*, 2013).

Brand Awareness

Several authors have identified awareness as a source of brand equity (Keller, 1993, 2001; Keller and Lehmann, 2006; Aaker, 1996, Srinivasan *et al.*, 2005). In fact, for a consumer to form an opinion about a particular brand, he or she must first know it. Thus, awareness is the first step in creating brand equity (Buil *et al.*, 2013).

To Aaker (1991), awareness is the ability that a potential buyer has to recognize or remember a certain brand as part of a category of products, i.e. reflects the presence of

the brand in the minds of the consumers. There are several levels of brand awareness, ranging from a mere recognition to dominance (Aaker, 1996).

Keller (1993), in turn, considers the brand knowledge as a source of value, which is defined in two components: brand awareness and brand image. Brand awareness is composed of brand recognition and brand recall. Regarding the brand recognition, it refers to the ability of the consumer to successfully identify the brand when exposed to it. In turn, the brand recall is linked to the consumer's ability to remember the brand from certain clues, such as the product category. For this author, the brand awareness affects purchasing decisions influencing the formation and strength of brand associations.

Netemeyer *et al.* (2004), in turn, defines the brand awareness as the degree to which consumers automatically think in the brand when a given product category is presented to them.

Yoo *et al.* (2000) and Yoo and Donthu (2001) conclude that there is a strong relationship between the value of the brand and its awareness, supporting therefore the idea that brand awareness can be a source of value.

Brand Associations

The perceptions and associations that consumers have about brands are a crucial element in the formation of brand equity.

For Keller (1993), the brand image is a source of value and is defined as the perceptions of the brand, as reflected by the associations held in the memory of consumers. Associations contain the meaning of the brand to the consumer and can be formed through personal experience or, indirectly, through advertising or other source of information (Keller, 2001). Associations can be classified into three broad categories (attributes, benefits and attitudes) which should be strong, favourable and unique.

Similarly, also Aaker (1996) argues that key associations, which are a source of brand equity, are unique in a product category or brand. For this author, the construct of brand associations can be divided into three elements: brand as product (value), brand as person (brand personality) and brand as organization (organizational associations).

For Lassar *et al.* (1995), the brand associations are even more nuclear, as they define the concept of brand equity as "*associations that consumers have*".

Finally, Yoo *et al.* (2000) recognize the importance of brand associations, considering that constitute a richer concept than simple awareness. For these authors the brand image is complex, based on multiple experiences, facts, episodes and displays information about the brand. Despite this recognition, brand equity measurement scale proposed, do not consider the associations an individual source of brand equity, but together with the awareness.

Most of the conceptual studies summarized in the Table 2 argues that awareness and associations are important components of CBBE.

Perceived Value

As previously mention, Aaker (1996) believes that the perceived value is one of the elements of brand association construct. According to this author, a brand that does not generate value will become vulnerable to its competitors. The value measure provides a success indicator of the brand in the creation of its value proposition.

The concept of perceived value is often associated with the concept of perceived quality and, according to Netemeyer *et al.*, (2004), consumers cannot make a clear distinction between these two concepts. However, the perceived quality can be more related to aspects associated with the brand, while the perceived value can be associated with the functional utility of the brand. This logic supports the inclusion of perceived value as a separate dimension (Aaker, 1996).

Brand Personality

Transposition of human characteristics to brands is greatly accepted among various researchers. Just as an individual looks at the personality traits of other individuals with whom he or she relates, the consumer also analyzes the characteristics of the brand with which he or she interacts. The consumer can then create associations using the personality traits he identifies with the brand, containing symbolic meaning and emotional value (Rodrigues, 2008).

For Aaker (1996), brand personality can be defined as a set of human characteristics associated with a given brand. For this author, the brand personality is integrated within the construct of the brand association, as one of its elements.

Organizational associations

The organizational associations are the third and final element that Aaker (1996) defines for the construct of brand associations. Aaker (1996), however, points out that this construct may not be relevant for all brands.

Netemeyer *et al.*, (2004) in its conceptual model of brand equity, also defines the organizational associations as an element of brand associations. For this author, organizational associations consist of beliefs that consumers have about the company in the market, about the honesty of the brand, trust and care for consumers (Rodrigues, 2008).

Perceived quality

The perceived quality is a key construct in many construction and measuring methods of brand equity (Aaker, 1996; Yoo *et al.*, 2000; Netemeyer *et al.*, 2004). In fact, several authors believe that the perceived quality is directly related to the purchase decision process and may lead the consumer to choose one brand over other competing brands (Zeithmal, 1988). Thus, the literature suggests that it is indeed a source of brand equity.

On the concept of perceived quality, it relates to the judgment of consumers make regarding the quality or superiority of a product or service (Zeithmal, 1988; Netemeyer *et al.*, 2004). In other words, the perceived quality is not objective, rather it is a personal judgment that depends on the personality, needs and consumer preferences.

The quality for consumers can be signaled through various elements of the marketing mix, such as the price (Erdem *et al.*, 2006; Zeithmal, 1988; Yoo and Donthu, 2000; Yoo *et al.*, 2000; Kamakura and Russell, 1993); the brand name (Zeithmal, 1988); the level of advertising (Zeithmal, 1988; Yoo *et al.*, 2000); the warranty (Erdem *et al.*, 2006); the distribution channels (Erdem *et al.*, 2006; Yoo and Donthu, 2000); the image of said distribution channels (Yoo *et al.*, 2000); and investment in promotional activities (Yoo *et al.*, 2000), with the latter element negatively affecting the perceived quality.

Loyalty

Loyalty is an important source of value for companies, because it results in a higher price for the brand, greater market share and consequently increased profits (Lassar *et al.*, 1995; Yoo *et al.*, 2000).

Similarly, loyalty is also often considered by several authors (Aaker, 1996; Yoo *et al.*, 2000; Yoo and Donthu, 2001) as an important dimension of brand equity.

The literature presents two approaches to better discriminate the concept of loyalty: behavioral approach (i.e., repeated purchases of the brand over time) and cognitive approach (i.e., supported by a positive attitude towards the brand and intention of consumers to buy as a first choice) (Yoo and Donthu, 2001).

For Blackston (1995), loyal consumers are the best asset that a company may have, because they are willing to pay a higher price for the brand, while being less willing to switch brands if prices rise and or when competing brands use promotional prices.

Aaker (1991), in turn, believes that brand loyalty is a basic element of brand equity, defining it as "the heart of the brand equity." For this author, brand loyalty is an indicator that measures consumer connection with the brand.

Keller (2001) does not explicitly consider loyalty as a source of brand equity, but incorporates this concept in "Brand Resonance", which is the last block in building brand equity. He states that where there is real resonance, customers express a high degree of brand loyalty and actively seek to interact with it.

For Zeithaml, Berry, and Parasuraman (1996), loyalty can be manifested in many ways. For instance, one can express a preference for a brand over the other; continuing to buy the same brand; or by increasing business with it in the future.

Finally, the behavioral definitions of brand equity are not by themselves sufficient to explain this construct, because there may be several reasons why consumers make repeat purchases of a brand. One of these reasons is related to the fact that repetition means less stress, translating into a simpler and faster purchase decision process. This phenomenon is related to the concept of inertia, which will be presented in the next point.

The following table summarizes the main conceptual studies on the dimensions of CBBE.

Table 2: Conceptual research on CBBE

Study	Dimensions of CBBE
Aaker (1991, 1996)	Brand awareness
	Brand associations (perceived value, brand personality, organizational associations)
	Perceived quality
	Brand loyalty
Blackston (1992)	Brand relationship
	(trust, customer satisfaction with the brand)
Keller (1993)	Brand knowledge
	(brand awareness, brand associations)
Sharp (1995)	Company/Brand awareness
	Brand image
	Relationships with customers/existing customer franchise
Berry (2000)	Brand awareness
	Brand meaning
Burmann <i>et al.</i> (2009)	Brand benefit clarity
	Perceived brand quality
	Brand benefit uniqueness
	Brand sympathy
	Brand trust

Source: Christodoulides & de Chernatony (2010)

Among the empirical studies, there are more than 40 dimensions of CBBE. However, and although there is no consensus on sources of brand value, most articles on CBBE follow Aaker's model (1991, 1996) or at least refer in their studies. According to Hawley and Tong (2009), Aaker's model (1991, 1996) is the most commonly cited model in the literature (de Oliveira *et al.*, 2015).

2.2.2.6. Inertia

Some researchers in marketing agree that inertia is a facilitator of behavioral loyalty (Han, Kim, and Kim, 2011). This construct is related to the value attributed to knowledge and comfort to keep the choice of a brand previously consumed. Thus, consumers with high inertia tend to repeatedly buy a product due to the investment in time and effort they consider to be necessary. In this regard, the inertia can act as an inhibitor and a psychological barrier to switching (Han *et al.*, 2011).

According to Keller & Lehmann (2006), inertia is the characteristic of “*consumers of simply choosing the same option rather than spending effort to consider others, for example, due to switching costs, or the confidence (less uncertainty) of a known alternative*” (p. 751).

This dissertation will follow the dimensions shown in Aaker’s theoretical model, and then added the construct of inertia, to differentiate this phenomenon of brand loyalty.

In the next subdivision, will be presented to another great perspective for measuring brand equity: firm-based brand equity.

2.2.3. Firm-based Brand Equity (FBBE)

2.2.3.1. Conceptualization

This perspective addresses the financial value that Brand Equity generates for the business. From the company's point of view, the goal in the estimation of Brand Equity is to analyze the contribution of the portfolio of brands in the activity and results of the company. Thus, the methods developed for their measurement are considered own financial or accounting framework.

In this perspective, Brand Equity is defined as “*the incremental cash flows which accrue to branded products over unbranded products*” (Simon & Sullivan, 1993). Hence the financial perspective seeks to measure the brand equity isolating additional net cash flow created by brand. These cash flows are the result of the willingness of customers to purchase a brand over a competing brand, even if the other brand is cheaper.

Financial measures such as sales and profit provide only partial indicators of marketing performance due to their historical orientation and typically short-term horizon. According to Leuthesser (1988), this misdirected focus could be reducing the long-run value of brand assets. The total benefits of marketing activities are not captured by short-run sales and profits. Thus, brand equity is the appropriate metric for evaluating the long-run impact of marketing decisions (since correctly and objectively measured) (Simon & Sullivan, 1993).

2.2.3.2. Measurement

Mahajan *et al.* (1990), developed a specific method for acquisitions and divestment contexts. This methodology is based on the premise that brand equity is dependent on the skills of the owning company to manage the brand assets (Cem Bahadir *et al.*, 2008).

Other models can also be integrated into this perspective of firm-based brand equity, namely the historical cost model and the replacement cost model. The first one, it derives from the sum of all investments that are made in the brand (e.g. promotion and R & D). This model has clear limitations because, first, it is necessary to define which costs should be attributed to the brand (the success of a brand results from the aggregate effort of the company, whose itemized valuation is very difficult); and on the other hand, hardly the model reflects the current value of brand equity because it does not take into account the

quality of the result, considering only the amount invested. Relative to the second model, it considers the current costs rather than historic costs and it is based on the calculation of the current price that a third party would be willing pay by purchase of a brand or cost of replacement. Simon and Sullivan (1993) developed a financial measure applicable to new products, which considers the brand equity as corresponding to the development cost multiplied by the probability of success (Rodrigues, 2008).

Still at the level of FBBE, Ailawadi *et al.* (2003) suggested in a study based on revenue-premium brand equity, that the latter is influenced by sales, generated by the organization working on the marketing mix while acknowledging the existence of competitor brands that pursue similar objectives. Their approach resides mostly on what the concept signifies as a source of revenue premium for organizations, and does not focus on its sources. The measurements that are grounded in price/revenue premium models are intuitively appealing. However, they can result in biased estimates of brand equity (cf. (Simon & Sullivan, 1993). The limitation of this approach lies in the fact that it expresses only the financial side of the brand equity paradigm without any consideration of marketing strategy (Davicik *et al.*, 2015).

Authors like Raggio and Leone (2007) are completely disagreed with the revenue premium concept. In their perspective, customer equity is a partial measure of brand value and should not be considered as an independent equity construct. Brand equity represents, on this case, the sale or replacement price of a brand and depending on whoever owns the brand this value differs (Davicik *et al.*, 2015).

Just as the perspective of CBBE, also in FBBE perspective some authors have reached special relevance in the literature. Thus, a brief presentation of two of these models will be made.

2.2.3.3. Simon and Sullivan's model

One of the most relevant models in this perspective was developed by Simon and Sullivan. This model assumes the market efficiency, in which share prices will consider at any time all information available. Thus, the stock price is used as a basis to determine brand equity. To do, the estimation technique isolates the value of brand equity from the value of other company assets (Simon & Sullivan, 1993). Firstly, the company value is divided between tangible and intangible assets; and, after that, the brand value is extracted

from the total value of the intangible assets. Thus, the brand's value may be calculated on the basis of the company's market capitalization or market value (Salinas, 2009).

The model involves two phases of analysis: a macro-analysis, which estimates an objective value for the company's brands and relates this value to brand equity determinants; and, a micro-analysis, which measures brand value's response to changes in marketing policy (Gabriela Salinas, 2009). Simon and Sullivan (1993) become aware that financial markets do not ignore marketing factors and recognize that stock prices reflect marketing decisions.

Phase 1: macro-analysis

$$MV = V_{TA(cost)} + V_I$$

where:

MV = the market value of the company's assets

$V_{TA(cost)}$ = the total value of the tangible assets at replacement cost

V_I = the total value of the intangible assets

The next step of the model decomposes intangible assets into three components:

$$V_I = f(VB, V_{NoM}, V_{ind})$$

where:

VB = Brand Value

V_{ind} = the value of industry-related factors that allow monopoly profits (e.g. regulation and concentration)

V_{NoM} = the value of the non-brand-related factors that reduce company costs relative to its competitors (e.g. R&D and patents)

Finally, brand value will consist of the market value of the company's assets less the value of the remaining tangible and intangible assets.

$$VB = MV - (V_{TA(cost)} + V_{ind} + V_{NoM})$$

However, this equation is merely a conceptual construct. To calculate brand value, the authors use a structural equation, which links brand determinants with brand value. According to authors, brand value will depend on the following brand value determinants:

- Advertising expenses;
- Age of brand;

- Order of entry;
- Current and historical advertising share

Phase 2: micro-analysis

This phase isolates the changes that occur in the individual level of brand by measuring the brand equity's reaction to important marketing decisions. The authors find that financial markets do not ignore marketing factors and recognize that stock prices reflect marketing decisions (Salinas, 2009).

Despite the relevance of this model in the literature and its strong points, namely it uses objective market-based valuation metrics, this method reveals several limitations, such as: it assumes market efficiency (all available information relevant to brand are easily identifiable for all market actors and incorporated into share prices); this model is more appropriate to mono-brand corporations (Salinas, 2009).

2.2.3.4. Damodaran's model

Also Damodaran (1996) proposes a valuation model based on differences in price to sales ratios. According to author, one of the benefits of strong brands is that they can charge higher prices for the same products, generating higher profit margins and higher price to sales ratios (Salinas, 2009).

$$Brand\ Value = \left[\left(\frac{P}{S} \right)_b - \left(\frac{P}{S} \right)_u \right] * Sales$$

where:

$\left(\frac{P}{S} \right)_b$ = Price to sales ratio for the company with brand

$\left(\frac{P}{S} \right)_u$ = Price to sales ratio for the company without brand

Two problems associated to this method is the difficulty involved in estimating the parameters of the generic product as well as it assumes the same level of current sales revenues for the branded and unbranded company.

2.2.4. Institutional approaches

Alongside the academic research on the measurement of brand equity, several consulting and market research companies have also developed their own methodologies, which cannot be neglected, since occasionally also appear in scholarly research (Christodoulides & de Chernatony, 2010). Thus, to address the problem of brand equity measurement, several institutions have measured the brand equity through different methodologies. The best known methods are summarized in the Table 3.

Table 3: Consultancy-based measures

Name	Measures of CBBE
Interbrand Brand Strength	Market
	Stability
	Brand leadership
	Trend
	Brand support
	Diversification
	Protection
Y&R Brand Asset Valuator	Knowledge
	Esteem
	Relevance
	Differentiation
WPP Brand Dynamics	Presence
	Relevance
	Performance
	Advantage
	Bonding
Research International Equity Engine	Affinity
	Perceived functional performance
	The interaction between the brand's equity and its price

Source: Christodoulides & de Chernatony (2010)

Comparing the measures used by consultants and academics (see Tables 2 and 3), there is apparently little in common in terms of the dimensions of brand equity (Christodoulides & de Chernatony, 2010).

2.2.5. Conclusion

The literature review presented in this chapter reveals that there is no consensus on the measurement models of brand equity nor about its dimensions. Despite this, the relevance of measurement and the identification of sources of brand value is unanimously accepted.

In terms of measuring brand equity, the literature points out two major perspectives: CBBE and FBBE (Davcik *et al.*, 2015).

The literature review in terms of CBBE allows identify a research dominant stream (based on cognitive psychology) and another secondary (based on the information economics). In this regard it highlights authors such as Aaker (1991) and Keller (1993).

In terms of measurement, there are two main classes of methods of measurement of CBBE: direct and indirect (Christodoulides & de Chernatony, 2010).

Direct approaches attempt to measure the phenomenon directly, by focusing on consumers' preferences (e.g. Park & Srinivasan 1994) or utilities (e.g. Kamakura & Russell 1993; Swait *et al.* 1993), while indirect approaches measure brand equity through its demonstrable manifestations (e.g. Yoo & Donthu 2001; Pappu *et al.* 2005).

Direct techniques have limited value for management as they are usually based on complex statistical models and do not provide insights into the sources of brand value. Indirect approaches, however, use simpler instruments to measure CBBE through their individual dimensions (Christodoulides & de Chernatony, 2010). Despite its usefulness for management, indirect measures of brand equity still have limitations, some of which stem from the lack of consensus on what dimensions constitute the CBBE, despite a wave of studies support Aaker's (1991, 1996) dimensionality (Christodoulides & de Chernatony, 2010).

In this chapter, we were also presented the dimensions of brand equity most commonly cited in the literature. Although there is no consensus in the literature, the dimensions proposed by Aaker (1991, 1996) are the most commonly cited (de Oliveira *et al.*, 2015).

On the other hand, the FBBE addresses the financial value that Brand Equity generates for the business. Simon and Sullivan (1993) and Damodaran (1996) are prominent authors who have developed models in this perspective.

Most CBBE models do not offer an estimation of brand equity in monetary terms while, on the other hand, many FBBE models do not consider consumers' perceptions. Hence, the creation of a unified brand equity model is necessary in order to integrate these two perspectives, on a holistic approach (de Oliveira *et al.*, 2015).

With regard to institutional models, though there are some that aggregate the two perspectives (e.g. *Interbrand*), these companies do not explicitly disclose their calculation procedures, making replication impossible (de Oliveira *et al.*, 2015).

Thus, the next chapter will be presented some studies that seek to evaluate the brand equity through a holistic perspective.

3. Towards a holistic theory of brand equity

3.1. Introduction

Taking into account the previous chapters, we can conclude that there is a need to develop more comprehensive methodological approaches to brand equity (Davcik *et al.*, 2015).

Davcik *et al.* (2015), after synthesising the contemporary approaches to this issue, argue that the development of an integrated theory of brand equity should be based on three pillars: stakeholder value, marketing assets and brand financial performance outputs. The authors argue that stakeholder value perspectives are an important pillar once these put the brand equity as a dynamic and social process of creating brand among stakeholders, considering it more comprehensive than the perspectives only based on consumer or firm. A second pillar is the marketing assets, because, according to the authors, a company can invest for example in an advertising campaign, but if there is no value for the stakeholders, the result of financial performance will be reduced.

Finally, the third pillar are the results of the financial performance of the brand, such as higher market share and higher return on investments. For the authors, a company may have a high financial performance in the current situation but without a continuous investment in marketing assets and stakeholder values, this position will be lost later.

Despite the importance of measuring the brand equity in a holistic way, which allows the managers to monitor the performance of the brand over time and measure the real return on investment in marketing, the literature is still very empty at this level. However, there is a trend towards convergence between marketing specialists and financial experts, evidenced in the development of valuation models that involve both areas of knowledge (Salinas, 2009).

Indeed, advances have been made, with some authors to develop models that address the brand equity and its measurement in a more holistic way. Thus, the next section will focus attention on some of these models.

3.2. Integrative models of brand equity

There are several authors that developed mixed approaches to measure brand equity. These methods attempt to combine the various attributes of the previous approaches.

Motameni and Shahrokhi (1998) proposes a global valuation model of brand equity and define Global Brand Equity (GBE) as the product of the brand's net earnings and a brand multiple based on brand strength. With this model, authors try to offer an interdisciplinary perspective for measuring brand equity. However, there are some critiques to this model, namely: "brand equity" is synonymous of "brand economic value" (Salinas, 2009).

Another model developed in this perspective was conducted by Shankar *et al.* (2008). These researchers sought to combine financial data with data from consumer survey. In this model, the authors identify two multiplicative components of brand equity: offering value and brand relative importance. The first corresponds to the net present value of a product or product range carrying the brand name and can be estimated using financial measures; in turn, the relative importance brand is a measure to isolate the effect of brand image, consumer utility in relation to the effect of other factors that also affect consumer choice. This method has as one of its advantages the ability to estimate the brand equity for multi-category brands. However, despite its holistic approach, the model makes it difficult to compare competing brands because these financial measures are often unavailable at the level of the brand. Additionally, this model allows only an overall estimate of the brand equity, because only brand relative importance is measured at the individual level (Christodoulides & de Chernatony, 2010).

Also Kapferer (2004) sought to analyze the measurement of brand equity in a more comprehensive way, trying to connect the "brand assets" (i.e., dimensions of CBBE) to brand value (net discounted cash flow attributable to the brand after discounting the cost of capital invested to produce and manage the business and the cost of marketing) through CBBE consequences (e.g. premium price) (Christodoulides & de Chernatony, 2010).

More recently, de Oliveira *et al.* (2015) developed a model that combines the two main perspectives of the measurement of brand equity: CBBE and FBBE. The model considers consumers' purchase intentions and brand-switching probabilities using Markov matrices and, in a second phase, calculates the monetary value of a brand, using the net present value of future generated cash flows. This model unifies the two perspectives of brand equity, integrating the Aaker's theoretical model (1991) with the return on marketing. For this, de Oliveira *et al.* (2015), following the framework of Rust *et al.* (2004), which was developed to estimate the customer equity, adapted it and estimated the brand equity.

Thus, the study provides an integrative model of brand equity: it starts with an indirect measure of CBBE (the sources of CBBE); it incorporates a direct measure of CBBE; and it ends with a financial measure of brand equity (discounted cash flow), allowing estimate the CBBE in monetary terms. Moreover, this model considers all existing competing brands in the market, because competition influences consumer choices (Rust *et al.*, 2004). Markov switching matrices have an important role in this model because they are used to model the probability of a consumer continue to use the same brand and the probability of changing brand over time. Additionally, this model allows us to estimate the financial return from marketing, differentiating the contributions of each of the drivers of brand equity. Finally, the model uses the probability of choice (purchase) as a proxy for brand equity, as in Kartono and Rao (2005), Ferjani *et al.* (2009) and Srinivasan *et al.* (2005).

3.3. Conclusion

As seen in this chapter, although the literature has many gaps at this level, some progress has been made, particularly with the development of models which consider the brand equity and its measurement in a more integrative way.

One of these models was developed by de Oliveira *et al.* (2015), which combines CBBE and FBBE, allowing estimate the customer-based brand equity in monetary terms. This model overcomes several limitations existing in the models previously developed and presented in this research.

For its relevance and topicality formed the basis of this research. However, in order to promote the originality of this research it was decided to explore this theme, with the aim of to contribute for academy and managerial developments. in a different way, but at its base and in its early stages is identical to the model proposed by de Oliveira *et al.* (2005), in particular by using also here in this study the probability of choice as a proxy for brand equity.

4. Empirical part

4.1. Introduction

After presenting the theoretical framework provided by literature review, this chapter will describe the methodology used and the research hypotheses to be tested, the proposed model and the measurement scales used for each construct.

This research is supported by a quantitative methodology, starting by carrying out a survey. After collecting and processing of data, there will be an analysis of these and will be estimated the model for each of the brands considered.

This chapter concludes with the presentation and discussion of results.

4.2. Methodology

The proposed methodology in this research Project is based on the model developed by de Oliveira *et al.* (2015), which in turn followed framework Rust *et al.* (2004). However, proposed approach only follows the methodology developed by Oliveira *et al.* (20015) at an early stage (definition of constructs to consider in the evaluation of brand equity, measurement scales and construction of the questionnaire). Similarly, it is also considered the probability of choice (purchase) as a proxy for brand equity. Other authors feature this option in their studies, as Kartono and Rao (2005), Ferjani *et al.* (2009) and Srinivasan *et al.* (2005).

To sum up, the methodology developed in this work follow the steps shown in Figure 3.

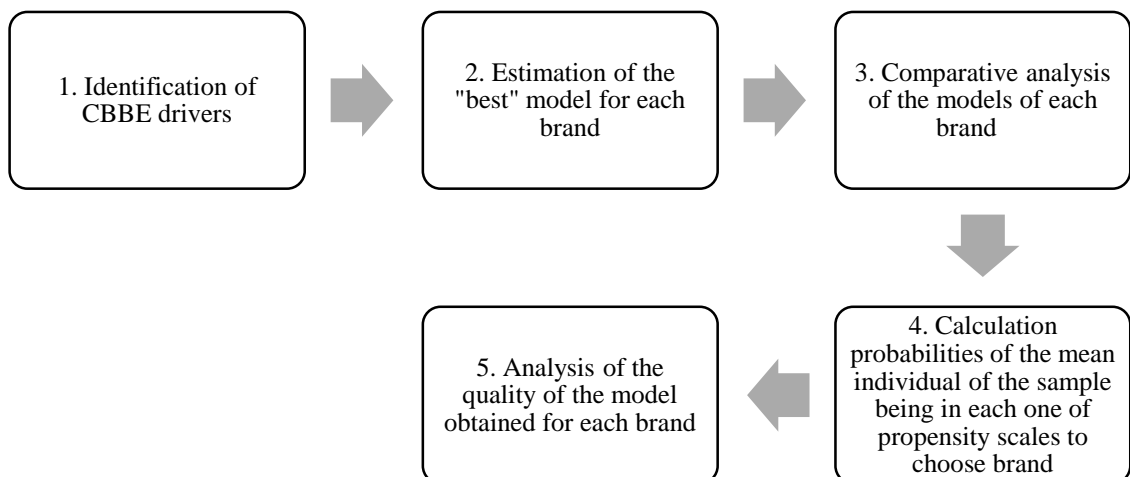


Figure 5: Methodological steps

Source: Author's elaboration

As already mentioned in the introductory chapter of this dissertation, this study aims to analyze factors that influence (positively or negatively) the probability of a particular brand be chosen (purchased). In addition, we intend to find out whether these factors cut across all brands belonging to a given category, or whether, by contrast, show significant changes. In addition, the probabilities are calculated for the average consumer of the sample being located at each of the different levels of likelihood of purchase, for each brand. Finally, the quality of the estimated models will be evaluated.

In order to apply this methodology, several beer brands will be used as the center of the research, including Super Bock, Sagres, Heineken and Carlsberg. This decision is related to the fact that they are brands of products that are acquired with relative frequency and are widely known. The choice of these four brands was made to ensure a significant representation of the market share. In addition, two are high penetration and two low penetration brands, providing a richer set.

In order to collect the necessary data, a quantitative approach/methodology through a questionnaire was developed.

The target population of this study includes all beer consumers (current and potential), living in Portugal.

As a matter of convenience, it was decided to carry out a non-probabilistic study, due to the time available and the high cost associated with probabilistic studies. According to Hill and Hill (1998), the sampling method for convenience has the advantage of being fast, economical and easy. However, there is an inherent disadvantage, in that it raises the issue of the sample or may not be representative of the population.

The questionnaire (which is available for consult in Annex B), consists of 35 questions, covering the different variables previously defined for this study. The data collection tool was built using a personal installation of the *LimeSurvey* software platform. The data obtained was prepared and loaded into *IBM's statistical* software *SPSS*, version 22. The questionnaire was openly promoted via email and social networks, during the month of August, 2016.

Regarding the measurement of constructs, this study opted for the use of previously developed and tested scales. The questionnaire was conducted in Portuguese, the scales were translated, undergoing some changes, mainly due to the translation effort or to be

interpretable in the context of this application. However, despite these changes, it was always sought to ensure reliability regarding the original scale.

The scales used within the scope of this research range from 1 up to 6 points, applying to all the constructs analyzed in an effort to ensure uniformity of scales. This option was chosen since, according to some authors (Preston and Colman, 2000; Finstad, 2010), an alternative 5-point scale offers too few possible answers, providing little differentiation in the opinion of the individuals. In addition, a pair scale avoids conservative responses (neutral), which can inhibit the stronger opinions.

Thus, all constructs related to brand equity dimensions and inertia were measured on a 6-point scale, where an answer of 1 means *Strongly Disagree* and an answer of 6 translates into *Strongly Agree*. Additionally, it has also created a category 0 to represent the *Not Applicable*.

Before the general dissemination of the questionnaire, pre-tests were performed during the month of August. Several changes resulted from the feedback, striving for improvement in understandability and in format of the questionnaire itself.

After the data collection and processing, an effort was made in order to ensure the consistency of the data and the one-dimensionality of the constructs. To this end, one of the most frequently used exploratory analysis techniques was used: a factor analysis (FA)¹. This technique, according to Hair *et al.* (2010), aims to reduce a large number of observed variables to a few factors, with minimal loss of information.

Thus, we proceed to FA on all the constructs related to the dimensions of the brand equity applied for each considered brand, with the inertia construct being executed separately. Consequently, the correlation matrix was analyzed and applied to the extraction method by Principal Component Analysis and Varimax rotation. In order to determine the number of principal components to retain, a filter was applied that accepted eigenvalues greater than 1 (Maroco, 2007). Regarding the rotation of factors, this was performed in order to assign a meaning to empirical factors extracted, because often the factor solution found is not always interpretable (Maroco, 2007). Thus, the chosen rotation method was the

¹ FA is usually applied for quantitative variables. However, empirical studies have revealed that if the ordinal variables present more than 5 points, it is more important the symmetry of the distribution function of these variables than their metric (Maroco, 2007).

Varimax, whose goal is to obtain a factorial structure in which one and only one of the original variables is strongly associated with a single factor and poorly associated with remaining factors (Maroco, 2007).

Later, with the objective of evaluating the data quality and adequacy of the sample, it used as measure the Kaiser-Meyer-Olkin (KMO), whose result should be greater than 0.5 in order to be considered acceptable to AF, and the Bartlett's Test of Sphericity, which tests the hypothesis that the variables are uncorrelated. If you do not reject this hypothesis, the factor analysis is considered inappropriate for these data.

Completed this step, it was then built the final variables in this study.

The next step consisted of the estimation of the regression model, including the analyse of its quality.

In this study, the dependent variable is "the probability of choosing the brand X at the next purchase occasion".

Thus, the dependent variable is considered qualitative, assuming discrete values classes. The classes used in the model are as follows:

1 = Very unlikely

2 = Unlikely

3 = Medium likelihood

4 = Likely

5 = Very likely/Certain

In this situations, as we are considering an ordinal qualitative dependent variable, the model should be an ordinal regression model, as this avoids the assumption of constant distances between the variable classes (Maroco, 2007). For this purpose, we used the *ordered probit model*. In this model, it is possible to model the observed responses considering a latent variable y_i^* which depends linearly of the independent variables x_i :

$$y_i^* = x_i' \beta + \varepsilon_i$$

where ε_i are independente and identically distributed random variables.

Finally, besides the principal factors (obtained by AF), the variables related to the inertia and the socio-economic characterization of individuals are considered as explanatory variables.

After this, as in this type of model, the estimate of the coefficient just gives, immediately, information on the meaning of influence, positive or negative, of the associated variable in the variable under study, the probabilities are calculated for an individual with average characteristics of subjects in the sample, of being located in each of the classes of the dependent variable, for each brand.

To conclude, the quality of the model will be analyzed, using a specific method for this type of models: Prediction Evaluation.

4.3. Measurement scales

Such as mentioned earlier, this dissertation opted to use the scales already developed and tested in the literature.

Thus, the scales used in this dissertation to measure the various constructs under analysis will be displayed on Table 4.

Regarding to issues related brand awareness and perceived quality was used Buil *et al.* (2008) scale, but adapted to this object of study. In turn, for the loyalty construct was applied Zeithamal, Parasuraman and Berry (1996) scale. Questions regarding perceived value, brand personality and organizational associations are supported especially in studies of Aaker (1996), Buil *et al.* (2008) and Pappu *et al.* (2005). Regarding the inertia construct, the questions were adapted from Han, Kim and Kim (2011) scale. Finally, issues related to market share, brand choice probability, size and frequency of the purchase are supported on the scale of Rust *et al.* (2004).

Table 4: Measurement scales

Construct	Items	Author(s)
Brand Awareness	1. I know the brand X 2. When I think of beer, brand X is one of the brands that comes to mind 3. I can recognize brand X amongst other competing brands of beer	Yoo <i>et al.</i> (2000); Netemeyer <i>et al.</i> (2004); Buil <i>et al.</i> (2008); de Oliveira <i>et al.</i> (2015)
Perceived Quality	1. Brand X offers very good quality products	Pappu <i>et al.</i> (2005, 2006); Buil <i>et al.</i> (2008); de Oliveira <i>et al.</i> (2015)

	2. Brand X offers products of consistent quality 3. Brand X offers very reliable products	
Brand Loyalty	1. Say positive things about brand X to other people 2. Encourage friends and relatives to consume brand X 3. Consider brand X my first choice	Zeithamal <i>et al.</i> (1996); de Oliveira <i>et al.</i> (2015)
Perceived Value	1. Within beer, I consider brand X a good buy 2. Brand X has a good quality/price ratio 3. Brand X is good value for money	Lassar <i>et al.</i> (1995); Aaker (1996); Netemeyer <i>et al.</i> (2004); Buil <i>et al.</i> (2008); de Oliveira <i>et al.</i> (2015)
Brand Personaly	1. Brand X is interesting 2. I have a image of the type of person who would consume brand X 3. The image of brand X fits my personality well	Aaker (1996); Buil <i>et al.</i> (2008); de Oliveira <i>et al.</i> (2015)
Organizational associations	1. I trust the company which makes brand X 2. I like the company which makes brand X 3. The company which makes brand X has credibility	Aaker (1996); Pappu <i>et al.</i> (2005, 2006); Buil <i>et al.</i> (2008); de Oliveira <i>et al.</i> (2015)
Inertia	1. The beer brands are all the same 2. I would find it difficult to compare beer brands 3. In general, it would be inconvenient to switch to another beer brand	Han <i>et al.</i> (2011); de Oliveira <i>et al.</i> (2015)
Market Share and Transition Probabilities	1. Which of the following brands of beer consume? 2. Last month, which brand did you consume? 3. The next time you consume beer, what is the probability that you will consume each of these brans?	Rust <i>et al.</i> (2004); de Oliveira <i>et al.</i> (2015)
Size and Frequency of Purchase	1. How much you spend a month on beer? 2. How much you think that will spend on beer a year from? 3. How often do you consume beer?	Rust <i>et al.</i> (2004); de Oliveira <i>et al.</i> (2015)

Source: Author's elaboration

4.4. Sample characterization

At this point, a brief characterization of the sample will be made, highlighting some demographic characteristics of consumers (see Appendix C for more details).

From a total of 244 collected (and complete) questionnaires were excluded 2 respondents because they are minors. Thus, the sample of this research comprises 242 individuals. All

other respondents were considered. However, respondents who reported they are not beer drinkers (43 respondents) were excluded from the model estimation phase.

Regarding the gender of the respondents participating in this research, these are broken down as follows: Female (42.1%); Male (57.9%), revealing some balance between both genders.

With respect to age, it is observed that this is very focused on the level 26-35 years, being que 65.7% of respondents have 35 years or less. Thus, we can conclude that it is a significantly young sample. Thus, we can conclude that it is a significantly young sample. Similar conclusion can be observed analyzing the civil status of respondents. In fact, almost 60% of respondents are single and married 37.2%.

As for employment status, the overwhelming majority claims to have professional activity (84.7%).

On the other hand, the overwhelming majority of respondents reported having higher education, against 25.2% who indicate having secondary education.

In terms of the size of the household, statistics show a relative balance between two (21.5%), 3 (31.8%) and 4 (27.7%) elements. Together, these three options totaling 81% of the sample.

At the level of beer consumption frequency 75.8% of respondents stated that consume beer, at least once a month, being the frequency once or twice a week, the most common hypothesis.

Finally, 58.3% of respondents stated that last month the Super Bock was the most consumed brand, followed by Sagres, with only 12.4%.

4.5. Results and discussion

Subsequently the results of this research will be presented.

After submitting all the variables for each brand, to the factor analysis, the following results are observed.²

Table 5: Number of retained components

	Items	Retained Components
Sagres	18	3
Super Bock	18	4
Heineken	18	4
Carlsberg	18	3
Inertia	3	1

Source: Author's elaboration

In this way, are presented in the following table, the retained components as a result of factor analysis for each of the brands, and to the construct of inertia (see Appendix D for details).

Table 6: Retained components

Retained Component				
	1	2	3	4
Sagres	Loyalty_Quality	Awareness_Value	Image_Organization	-
Super Bock	Loyalty_Personality	Organization	Value	Awareness_Quality
Heineken	Loyalty_Personality	Awareness_Quality	Organization	Value
Carlsberg	Loyalty_Personality	Awareness_Quality	Value_Organization	-
Inertia	Inertia	-	-	-

Source: Author's elaboration

The results of the factorial analysis already show evidences of significant differences between brands. First of all, in two brands (Sagres and Carlsberg) only three factors were retained, while in the other two brands (Super Bock and Heineken) four factors were preserved. In turn, inertia retained only one factor. However, the Factor Analysis is not applied in this construct because, as we will see below, do not present an acceptable value for it.

² In this study, missing values were replaced with mean.

Regarding the adequacy of the sample to perform the factor analysis, the results of the widely used measure of KMO suggest that the data is adequately adjusted.

According to Maroco (2007), for KMO values between 0.8 and 0.9, the recommendation for the FA is good; and for values greater than 0.9 it is considered excellent.

Among the KMO results presented, one can see that, apart for the Super Bock brand (which has a higher KMO 0.8), all other subjects have an excellent KMO (greater than 0.9).

Additionally, it was decided to perform a FA of the construct of inertia (which is constituted by only three variables), which presents a KMO 0.5 and thus being unacceptable for analysis.

Table 7: KMO and Bartlett's Test of Sphericity

Sagres	Kaiser-Meyer-Olkin		,938
	Bartlett's Test of Sphericity	Approx. Chi-Square df Sig.	2034,199 153 ,000
	% of Cumulative Variance		71,660
	Kaiser-Meyer-Olkin		,881
Super Bock	Kaiser-Meyer-Olkin		,924
	Bartlett's Test of Sphericity	Approx. Chi-Square df Sig.	1542,714 153 ,000
	% of Cumulative Variance		67,447
	Kaiser-Meyer-Olkin		,924
Heineken	Kaiser-Meyer-Olkin		,927
	Bartlett's Test of Sphericity	Approx. Chi-Square df Sig.	1584,545 153 ,000
	% of Cumulative Variance		71,848
	Kaiser-Meyer-Olkin		,927
Carlsberg	Kaiser-Meyer-Olkin		,500
	Bartlett's Test of Sphericity	Approx. Chi-Square df Sig.	1418,841 153 ,000
	% of Cumulative Variance		66,273
	Kaiser-Meyer-Olkin		,500
Inertia	Kaiser-Meyer-Olkin		,500
	Bartlett's Test of Sphericity	Approx. Chi-Square df Sig.	58,572 3 ,000
	% of Cumulative Variance		50,208
	Kaiser-Meyer-Olkin		,500

Finally, with scores factor obtained by FA, the data was imported into the *E-Views* (Version 8) software, primarily used to produce the estimation of the models.

In order to make the estimation of the "best" models for each brand, a correlation matrix was used, in an effort to analyze what the best "candidates" to be explanatory factors of

the dependent variable (i.e., understand that independent variables are more strongly correlated with the dependent variable).

Unsurprisingly, the main factors resulting from FA are those that have the highest correlation with the dependent variable. With this first step, the model was tested and improved by adding variables related to the profile of the respondents, along with the purchase volume and frequency. Regarding the inertia construct, since it has not proved adequate for FA, an option to use the original items was made in order to try to determine whether they were statistically significant to explain the probability of brand choice.

Hence, the data were then tested in the form of an ordered probit model, obtaining the following estimated models:

Table 8: Ordered probit model - Sagres

Dependent Variable: LIKELY_SAGRES

Method: ML - Ordered Probit (Quadratic hill climbing)

Included observations: 199

Number of ordered indicator values: 5

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LOYALTY_QUALITY	0.747271	0.090523	8.255010	0.0000
AWARENESS_VALUE	0.728644	0.105092	6.933361	0.0000
PERSONALITY_ORGANIZATION	0.188525	0.082507	2.284944	0.0223
MOST CONSUMED BRAND SG	1.133916	0.253683	4.469808	0.0000
AGE 18-35	-0.337272	0.165678	-2.035708	0.0418

Limit Points

LIMIT_2:C(6)	-1.532882	0.183393	-8.358442	0.0000
LIMIT_3:C(7)	-0.221188	0.150358	-1.471070	0.1413
LIMIT_4:C(8)	0.844885	0.162052	5.213655	0.0000
LIMIT_5:C(9)	1.967061	0.205081	9.591608	0.0000

Pseudo R-squared	0.281675	Akaike info criterion	2.347204
Schwarz criterion	2.496148	Log likelihood	-224.5468
Hannan-Quinn criter.	2.407486	Restr. log likelihood	-312.5981
LR statistic	176.1024	Avg. log likelihood	-1.128376
Prob(LR statistic)	0.000000		

Table 9: Ordered probit model – Super Bock

Dependent Variable: LIKELY_SUPER BOCK

Method: ML - Ordered Probit (Quadratic hill climbing)

Included observations: 199

Number of ordered indicator values: 5

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LOYALTY_PERSONALITY	0.211499	0.088416	2.392087	0.0168
VALUE	0.259071	0.086808	2.984418	0.0028
AWARENESS_QUALITY	0.362041	0.090038	4.020980	0.0001
PERSONAL INCOME	0.145641	0.070855	2.055475	0.0398
MOST CONSUMED BRAND SB	1.064323	0.201250	5.288566	0.0000
Limit Points				
LIMIT_2:C(6)	-2.329650	0.552582	-4.215936	0.0000
LIMIT_3:C(7)	-1.071157	0.310671	-3.447879	0.0006
LIMIT_4:C(8)	-0.040518	0.282419	-0.143467	0.8859
LIMIT_5:C(9)	1.087004	0.293388	3.705003	0.0002
Pseudo R-squared	0.191831	Akaike info criterion		1.814803
Schwarz criterion	1.963746	Log likelihood		-171.5729
Hannan-Quinn criter.	1.875084	Restr. log likelihood		-212.2982
LR statistic	81.45053	Avg. log likelihood		-0.862175
Prob(LR statistic)	0.000000			

Table 10: Ordered probit model - Heineken

Dependent Variable: LIKELY_HEINEKEN

Method: ML - Ordered Probit (Quadratic hill climbing)

Included observations: 199

Number of ordered indicator values: 5

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LOYALTY_PERSONALITY	0.713087	0.087670	8.133758	0.0000
AWARENESS_QUALITY	0.431550	0.093065	4.637101	0.0000
VALUE	0.331609	0.084645	3.917649	0.0001
AGE18-25	-0.659755	0.216618	-3.045705	0.0023
SINGLE	0.584947	0.184177	3.176003	0.0015
PERSONAL INCOME	0.143490	0.066272	2.165186	0.0304

Limit Points					
LIMIT_2:C(7)	-0.296848	0.266886	-1.112265	0.2660	
LIMIT_3:C(8)	1.234344	0.281076	4.391496	0.0000	
LIMIT_4:C(9)	2.230623	0.299058	7.458840	0.0000	
LIMIT_5:C(10)	3.297744	0.355522	9.275792	0.0000	
Pseudo R-squared	0.217950	Akaike info criterion		2.281268	
Schwarz criterion	2.446761	Log likelihood		-216.9861	
Hannan-Quinn criter.	2.348247	Restr. log likelihood		-277.4581	
LR statistic	120.9440	Avg. log likelihood		-1.090383	
Prob(LR statistic)	0.000000				

Table 11: Ordered Probit Model - Carlsberg

Dependent Variable: LIKELY_CARLSBERG

Method: ML - Ordered Probit (Quadratic hill climbing)

Included observations: 199

Number of ordered indicator values: 5

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LOYALTY_PERSONALITY	0.781559	0.090907	8.597341	0.0000
AWARENESS_QUALITY	0.597033	0.095497	6.251835	0.0000
SINGLE	0.391955	0.167892	2.334573	0.0196
INERTIA	0.146967	0.063414	2.317596	0.0205
Limit Points				
LIMIT_2:C(5)	-0.202915	0.190850	-1.063221	0.2877
LIMIT_3:C(6)	1.400940	0.217838	6.431122	0.0000
LIMIT_4:C(7)	2.348148	0.244514	9.603326	0.0000
LIMIT_5:C(8)	3.121567	0.289363	10.78773	0.0000
Pseudo R-squared	0.230316	Akaike info criterion		2.147079
Schwarz criterion	2.279474	Log likelihood		-205.6344
Hannan-Quinn criter.	2.200663	Restr. log likelihood		-267.1673
LR statistic	123.0657	Avg. log likelihood		-1.033339
Prob(LR statistic)	0.000000			

These results allow a better understanding of the factors that influence the dependent variable, whether they are statistically significant and in which direction (positive or

negative). Regarding the significance level, this was considered to be 5%. Thus, are selected the variables that have a p-value less than 0.05, which means that those variables are statistically significant at least to 5%, to explain the probability of consumption of the brands in analysis.

Thus, we can now analyze the outputs obtained for each brand, and the differences between them.

In an overview, we can already notice that all variables contribute positively to explain the dependent variable, i.e. the higher they are, greater the likelihood of brand choice. The only exception is the variable Age, which contributes with statistical significance, negatively to the probability of choice in younger age groups, in the brands Heineken and Sagres. This may mean that young people in the sample, have a lower propensity to consume these brands, with preference for the use of other competing brands such as Super Bock and Carlsberg.

Moreover, organizational associations (organization) are not statistically significant, which makes sense because these are brands that present a brand management at the product level and separated from the corporate brand.

Comparing the two brands of high penetration, we can see that the most recently consumed brand strongly influences the probability of choosing that brand, a situation that does not happen with the brands of low penetration, in which the most recently consumed brand is not statistically significant.

Furthermore, we can also see that the variable Single is statistically significant at Heineken and Carlsberg, which may be related to the positioning that these brands have.

As a point in common, the constructs of loyalty, awareness and quality are statistically significant for all brands.

In the specific case of Carlsberg, it is the only brand where the variable value is not statistically significant. This may be related to the fact that it is a brand with less market penetration, which is not as well known by consumers. This is also consistent with the fact that variable Inertia (no statistical significance for all other brands), appears in Carlsberg as being statistically significant.

These results make sense because if consumers show not feel a perceived value in this brand, your purchase may be closely related to the inertia factor (i.e., consumers can buy Heineken simply for the sake of comfort in keeping the same buying decision).

In this type of models, the estimate of the coefficient just gives, immediately, information on the meaning of influence, positive or negative, of the associated variable in the variable under study. Information about the magnitude of this influence requires additional calculations and depends on the values of the explanatory variables observed for a given individual, leading to different results from individual to individual.

Thus, the usual procedure is to make these calculations for an individual with the average characteristics of subjects in the sample, which is presented below.

Table 12: Probabilities for an “average individual” to belong to each variable dependent class

	Carlsberg	Heineken	Sagres	Super Bock
Very unlikely	23,20%	16,70%	6,42%	0,02%
Unlikely	57,63%	54,70%	35,32%	0,95%
Medium likelihood	15,73%	22,68%	38,70%	8,58%
Likely	2,97%	5,49%	17,17%	33,30%
Very likely/Certain	0,48%	0,43%	2,39%	57,15%

Source: Author's elaboration

A quick analysis of this table allows us to conclude that, in the low penetration brands, the lower classes of the probability of choice are those that are most likely (80.83% in Carlsberg and Heineken on 71.4%). On the other hand, the opposite scenario happens in high penetration brands, particularly in Super Bock (probability of 90.45% for the higher classes of the dependent variable). In the case of Sagres, the probabilities are distributed over the intermediate classes of the dependent variable. These results are generally aligned with respective market shares. Thus, we can find a clear association between the evaluation that consumers (respondents) makes for each of the brands, with the propensity to come effectively to choose (to buy) these brands, variable that is used here as a proxy for brand equity.

In addition, a regular feature in assessing the results of these models is the presentation of a table (Prediction Evaluation) which confronts the model predictions (all individuals in the sample are classified in a group according to the estimated model) with those would be achieved using a model predictive ad hoc, where all individuals are grouped in the group with higher probability. The comparison of these two predictions with the

actual/observed distribution in the sample, allows to compare the model with the performance that results from ad hoc model.

That is, in the case of Super Bock, as the category that has the highest probability is the category "Very Likely / Certain", the ad hoc model will classify all the responses in this category. Thus, all the answers "Very Likely / Certain" will be correctly forecasted by ad hoc model, but any other scenario will be incorrectly predicted.

Thus, this method aims to compare the percentage of responses provided correctly by the model that was estimated in this study, with the ad hoc model.

The aim is to analyze the performance of the model in study on the ability to correctly predict answers (probability of choosing a brand) and what is the gain obtained when compared to ad hoc model.

This comparative analysis can be observed in the following tables.

Table 13: Prediction Evaluation - Sagres

Prediction Evaluation for Ordered Specification						
Equation: SAGRES_MODEL						
Estimated Equation						
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect	
1	35	20	15	57.143	42.857	
2	52	27	25	51.923	48.077	
3	51	29	22	56.863	43.137	
4	38	12	26	31.579	68.421	
5	23	15	8	65.217	34.783	
Total	199	103	96	51.759	48.241	
Constant Probability Spec.						
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect	
1	35	0	35	0.000	100.000	
2	52	52	0	100.000	0.000	
3	51	0	51	0.000	100.000	
4	38	0	38	0.000	100.000	
5	23	0	23	0.000	100.000	
Total	199	52	147	26.131	73.869	

In the case of Sagres, we can see that the model correctly predicts 103 responses, whereas the ad-hoc model provides only 52 correct responses. This means that the proposed model for Sagres provides an improvement of 25.63%, being considered as having a good predictive ability (Maroco, 2007).

Table 14: Prediction Evaluation – Super Bock

Prediction Evaluation for Ordered Specification
Equation: SUPERBOCK_MODEL

Estimated Equation					
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect
1	1	0	1	0.000	100.000
2	7	2	5	28.571	71.429
3	23	6	17	26.087	73.913
4	54	21	33	38.889	61.111
5	114	106	8	92.982	7.018
Total	199	135	64	67.839	32.161

Constant Probability Spec.					
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect
1	1	0	1	0.000	100.000
2	7	0	7	0.000	100.000
3	23	0	23	0.000	100.000
4	54	0	54	0.000	100.000
5	114	114	0	100.000	0.000
Total	199	114	85	57.286	42.714

Regarding Super Bock, the model predicts correctly 135 responses, while the ad hoc model predicts correctly 114. Thus, also in this brand there is an improvement of the performance model, in this case 10.55%.

Table 15: Prediction Evaluation - Heineken

Prediction Evaluation for Ordered Specification
Equation: HEINEKEN_MODEL

Estimated Equation					
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect
1	50	24	26	48.000	52.000
2	78	51	27	65.385	34.615
3	43	14	29	32.558	67.442
4	22	2	20	9.091	90.909
5	6	0	6	0.000	100.000
Total	199	91	108	45.729	54.271

Constant Probability Spec.					
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect
1	50	0	50	0.000	100.000
2	78	78	0	100.000	0.000
3	43	0	43	0.000	100.000
4	22	0	22	0.000	100.000
5	6	0	6	0.000	100.000

Total	199	78	121	39.196	60.804
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In the case of Heineken, the model correctly covers 91 responses, whereas the ad-hoc model provides correctly 78 responses. Again, the model shows an improvement, though more residual (6.53%).

Table 16: Prediction Evaluation - *Carlsberg*

Prediction Evaluation for Ordered Specification
Equation: CARLSBERG_MODEL
Date: 09/29/16 Time: 16:26

Estimated Equation					
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect
1	62	38	24	61.290	38.710
2	82	57	25	69.512	30.488
3	33	13	20	39.394	60.606
4	14	0	14	0.000	100.000
5	8	2	6	25.000	75.000
Total	199	110	89	55.276	44.724
Constant Probability Spec.					
Dep. Value	Obs.	Correct	Incorrect	% Correct	% Incorrect
1	62	0	62	0.000	100.000
2	82	82	0	100.000	0.000
3	33	0	33	0.000	100.000
4	14	0	14	0.000	100.000
5	8	0	8	0.000	100.000
Total	199	82	117	41.206	58.794

To conclude, the proposed model for Carlsberg predicts correctly 110 responses, and the ad hoc model provides only 82. Thus, this model also provides a significant improvement of 14.07%, in the predictive capacity.

5. Conclusion

This dissertation seeks to provide a contribution to the literature of Brand Management.

Throughout this study highlight the growing importance the Brand Equity has achieved both the world of management, whether in the academic world and has been studied by several authors.

However, although there is unanimity in the recognition of brand equity as an intangible asset valuable, there is no consensus on its conceptualisation, nor on how this asset should be measured.

In the literature, several authors have presented conceptualizations and measurement models of brand equity; some based on a consumer perspective, and others supported in a financial perspective.

This dissertation analyzed the concept of brand equity and, more specifically, the existing problems surrounding its measurement. This study had as major aim to present, in a first phase, a current status of the main conceptualizations and existing measurement models, focusing on its advantages and limitations, as well as the current situation around the attempt to obtain an approach that considers the brand equity and its measurement of an integrated and globally well accepted way. Moreover, in a second phase was presented and tested a model to evaluate which factors most influence have on the probability of choosing a brand (considered in this study as proxy of brand equity) and how these can vary between competing brands.

From the analysis of the results, it was concluded that there are significant differences between the brands in respect of the factors explaining the probability of choosing a brand.

This study aims to contribute to a better academic and management knowledge on the topic of research, in particular by introducing a model that has not been applied in this research area.

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Appendix

A - Brand equity studies

Author(s)	Consumer perception	Monetary value	Competition-monitoring	Brand-switch probability	Temporal perspective	Presents the contribution of each of the drivers
Simon and Sullivan (1993)	No	Yes	No	No	Yes (past)	No
Park and Srinivasan (1994)	Yes	Yes - partially	Yes	No	No	No
Erdem and Swait (1998)	Yes	Yes - partially	Yes	Yes	No	No
Ailawadi <i>et al.</i> (2003)	No	Yes	Yes	No	No	No
Damodaran (2006)	No	Yes	No	No	Yes	No
Erdem, Swait, and Valenzuela (2006)	Yes	Yes	Yes	No	No	Yes
Yoo and Donthu (2001)	Yes	No	Yes	No	No	Yes
Pappu, Quester, and Cooksey (2005)	Yes	No	Yes	No	No	Yes
Srinivasan, Park, and Chang (2005)	Yes	Yes	Yes (with a product without brand)	No	No	Yes
Buil, de Chernatony, and Martínez (2008)	Yes	No	Yes	No	No	Yes
Tong and Hawley (2009)	Yes	No	Yes	No	No	Yes
Ferjani <i>et al.</i> (2009)	Yes	Yes	Yes (with a product without brand)	No	No	No
de Oliveira <i>et al.</i> (2015)	Yes	Yes	Yes	Yes	Yes	Yes

Source: de Oliveira *et al.* (2015)

B – Survey

Valor das marcas de cerveja para o consumidor

No âmbito da minha dissertação de Mestrado, está a ser desenvolvida uma investigação sobre o valor das marcas para o consumidor. Para que os objetivos propostos sejam alcançados, gostaria de contar com a sua importante colaboração para este projeto de investigação!

Perfil do inquirido

[] Sexo *

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Feminino
- ☐ Masculino

[] Idade *

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ < 18 anos
- ☐ 18-25 anos
- ☐ 26-35 anos
- ☐ 36-45 anos
- ☐ > 45 anos

[] Estado Civil *

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Solteiro(a)
- ☐ Casado(a)/União de Facto
- ☐ Separado(a)/Divorciado(a)
- ☐ Viúvo(a)

[] Distrito *

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Lisboa
- ☐ Porto
- ☐ Setúbal
- ☐ Braga
- ☐ Aveiro
- ☐ Leiria

- ☐ Santarém
- ☐ Faro
- ☐ Coimbra
- ☐ Viseu
- ☐ R. A. Madeira
- ☐ R. A. Açores
- ☐ Viana do Castelo
- ☐ Vila Real
- ☐ Castelo Branco
- ☐ Évora
- ☐ Guarda
- ☐ Beja
- ☐ Bragança
- ☐ Portalegre

[] Escolaridade

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Ensino Básico
- ☐ Ensino Secundário
- ☐ Ensino Superior (Bacharelato, Licenciatura ou mais elevado)

[] Exerce atividade remunerada?

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Sim
- ☐ Não

[] Quantas pessoas moram na sua residência (incluindo você)?

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 ou mais

☐ Quantas pessoas têm mais de 18 anos (adultos), incluindo você, na sua residência?

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 ou mais

☐ Quantas pessoas que moram na sua residência têm algum tipo de rendimento (incluindo você)?

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 ou mais

☐ Escalão de Rendimento Bruto Individual Mensal (incluindo salários, comissões, reformas, alugueres, rendimentos de aplicações financeiras, etc.).

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Até 600€
- ☐ De 601€ a 1.000€
- ☐ De 1.001€ a 1.500€
- ☐ De 1.501€ a 2.000€
- ☐ Superior a 2.001€

Quota de Mercado e Probabilidades de Transição

Qual(is) das seguintes marca(s) de cerveja consome?

Por favor, selecione **todas** as que se aplicam:

- ☐ Sagres
- ☐ Super Bock
- ☐ Heineken
- ☐ Carlsberg
- ☐ Nenhuma destas marcas
- ☐ Não consumo cerveja

[] No último mês, qual a marca que mais consumiu? (Se selecionar a opção "Outra" indique-a por favor na caixa de texto)

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Sagres
- ☐ Super Bock
- ☐ Heineken
- ☐ Carlsberg
- ☐ Outra
- ☐ Não consumo cerveja

Escreva um comentário à sua escolha aqui:

[] Da próxima vez que consumir cerveja, qual a probabilidade de consumir cada uma destas marcas? (Se respondeu que não consome cerveja na questão anterior, indique a probabilidade de escolher cada uma das marcas na eventualidade de vir a consumir).

Por favor, selecione a posição apropriada para cada elemento:

	Nenhuma	Baixa	Média	Alta	Muito Alta/Certeza
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Volume e Frequência de Compra

[] Quanto gasta por mês em cerveja atualmente? (Caso não seja consumidor de cerveja, inclua o valor que gasta em compras para terceiros.)

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Não gasto dinheiro em cerveja
- ☐ Menos de 5€
- ☐ Entre 5€ a 15€
- ☐ Entre 15€ a 30€
- ☐ Entre 30€ a 40€
- ☐ Mais de 40€

☐ Quanto pensa gastar por mês daqui a 12 meses? (Caso não seja consumidor de cerveja, inclua o valor que pensa gastar em compras para terceiros.)

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Não penso gastar dinheiro em cerveja
- ☐ Menos de 5€
- ☐ Entre 5€ a 15€
- ☐ Entre 15€ a 30€
- ☐ Entre 30€ a 40€
- ☐ Mais de 40€

☐ Com que frequência consome cerveja?

Por favor, selecione **apenas uma** das seguintes opções:

- ☐ Diariamente
- ☐ 3 a 4 vezes por semana
- ☐ 1 a 2 vezes por semana
- ☐ 1 vez por mês ou mais
- ☐ Menos de 1 vez por mês

Notoriedade da marca

☐ Conheço bem a marca **X**.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] Quando penso em cerveja, a marca X é uma das primeiras marcas que me vem à mente.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] Consigo reconhecer, distinguir o logo/cores/embalagem da marca X entre as outras marcas de cerveja.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Qualidade Percebida

[] Aprecio muito a qualidade dos produtos da marca X.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐ **Considero que a marca X mantém a qualidade dos produtos oferecidos de forma bastante consistente.**

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐ **Confio nos produtos da marca X.**

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lealdade à Marca

☐ **Digo coisas positivas sobre a marca X a outras pessoas.**

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐ **Aconselho amigos e parentes a consumirem a marca X.**

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] Considero a marca X a minha primeira escolha.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Valor Percebido

[] Tendo em conta as diversas marcas de cerveja existentes, considero a marca X uma boa escolha.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] A marca X tem uma boa relação qualidade/preço.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] Considero adequado o valor que normalmente se paga para adquirir a marca X.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Personalidade da marca

[] Considero que a marca X é interessante e capta a minha atenção.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] Tenho uma imagem do tipo de consumidor da marca X.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[] A imagem da marca X combina com a minha personalidade.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Associações organizacionais

☐ Confio na empresa que detém a marca X.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐ Gosto da empresa que detém a marca X.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐ A empresa que detém a marca X tem credibilidade.

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Sagres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Bock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Discordo Totalmente	Discordo Muito	Discordo Pouco	Concordo Pouco	Concordo Muito	Concordo Totalmente	Não sei/NA
Heineken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carlsberg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Inércia

[] Considero que:

Por favor, selecione a posição apropriada para cada elemento:

	Discordo Totalmen te	Discor do Muito	Discor do Pouco	Concor do Pouco	Concor do Muito	Concordo Totalmente	Não sei/NA
As marcas de cerveja são todas iguais.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
É difícil comparar marcas de cerveja.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Em geral, seria inconveniente mudar para outra marca de cerveja.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Obrigada pela sua colaboração!

C – Descriptive statistics

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	102	42,1	42,1	42,1
	Male	140	57,9	57,9	100,0
	Total	242	100,0	100,0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25 years	60	24,8	24,8	24,8
	26-35 years	99	40,9	40,9	65,7
	36-45 years	57	23,6	23,6	89,3
	>45 years	26	10,7	10,7	100,0
	Total	242	100,0	100,0	

Civil status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	145	59,9	59,9	59,9
	Married/Living common law	90	37,2	37,2	97,1
	Separated/Divorced	7	2,9	2,9	100,0
	Total	242	100,0	100,0	

Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary school	3	1,2	1,2	1,2
	Secondary school	61	25,2	25,2	26,4
	Higher education	178	73,6	73,6	100,0
	Total	242	100,0	100,0	

Remunerated activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	205	84,7	84,7	84,7
	No	37	15,3	15,3	100,0
	Total	242	100,0	100,0	

Household size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	10,3	10,3	10,3
	2	52	21,5	21,5	31,8
	3	77	31,8	31,8	63,6
	4	67	27,7	27,7	91,3
	5 or more	21	8,7	8,7	100,0
	Total	242	100,0	100,0	

Personal income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 600€	25	10,3	10,3	10,3
	]600€; 1000€]	69	28,5	28,5	38,8
	]1.000€; 1.500€]	69	28,5	28,5	67,4
	]1.500€; 2.000€]	30	12,4	12,4	79,8
	> 2.000€	49	20,2	20,2	100,0
	Total	242	100,0	100,0	

Consumption frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	14	5,8	7,0	7,0
	3 to 4 times a week	33	13,6	16,6	23,6
	once or twice a week	90	37,2	45,2	68,8
	once a month or more	47	19,4	23,6	92,5
	Less than once a month	15	6,2	7,5	100,0
	Total	199	82,2	100,0	
Missing	System	43	17,8		
Total		242	100,0		

D – Principal component analysis (PCA)

Sagres

Rotated Component Matrix^a

	Component		
	1	2	3
[Sagres] Knowledge	,208	,718	,207
[Sagres] Awareness	,474	,623	,074
[Sagres] Recognition	,088	,793	,086
[Sagres] Good quality	,749	,450	,248
[Sagres] Consistent quality	,394	,642	,388
[Sagres] Trust	,387	,682	,412
[Sagres] Word-of-mouth	,831	,284	,275
[Sagres] Advice	,820	,198	,243
[Sagres] First choice	,844	,257	,137
[Sagres] Good buy	,711	,437	,285
[Sagres] Quality/Price	,422	,557	,374
[Sagres] Good value for money	,202	,553	,397
[Sagres] Interesting	,701	,298	,422
[Sagres] Consumer image	,442	-,016	,543
[Sagres] Image fits my personality	,557	,023	,603
[Sagres] Trust in the company	,189	,412	,807
[Sagres] Like the company	,307	,347	,793
[Sagres] Company has credibility	,151	,377	,771

Super Bock

Rotated Component Matrix^a

	Component			
	1	2	3	4
[Super Bock] Knowledge	,110	,235	,078	,680
[Super Bock] Awareness	,084	,024	,366	,681
[Super Bock] Recognition	,112	,010	-,145	,693
[Super Bock] Good quality	,533	,049	,457	,475
[Super Bock] Consistent quality	,359	,020	,379	,569
[Super Bock] Trust	,315	,203	,390	,605
[Super Bock] Word-of-mouth	,715	,055	,307	,308
[Super Bock] Advice	,696	,077	,168	,221
[Super Bock] First choice	,544	,016	,513	,201
[Super Bock] Good buy	,603	-,017	,536	,266
[Super Bock] Quality/Price	,257	,175	,787	,084
[Super Bock] Good value for money	,104	,252	,797	,098
[Super Bock] Interesting	,663	,158	,304	,317
[Super Bock] Consumer image	,681	,274	-,001	-,026
[Super Bock] Image fits my personality	,731	,389	,058	,038
[Super Bock] Trust in the company	,208	,898	,152	,110
[Super Bock] Like the company	,180	,892	,151	,117
[Super Bock] Company has credibility	,120	,895	,103	,103

Heineken

Rotated Component Matrix^a

	Component			
	1	2	3	4
[Heineken] Knowledge	,276	,674	,188	-,025
[Heineken] Awareness	,567	,430	,083	,187
[Heineken] Recognition	,117	,688	,267	,089
[Heineken] Good quality	,513	,672	,173	,221
[Heineken] Consistent quality	,297	,743	,177	,322
[Heineken] Trust	,207	,756	,278	,325
[Heineken] Word-of-mouth	,706	,407	,155	,301
[Heineken] Advice	,747	,337	,123	,184
[Heineken] First choice	,782	,150	,161	,250
[Heineken] Good buy	,559	,481	,178	,392
[Heineken] Quality/Price	,287	,256	,222	,809
[Heineken] Good value for money	,161	,161	,231	,865
[Heineken] Interesting	,531	,459	,294	,233
[Heineken] Consumer image	,602	,061	,455	-,127
[Heineken] Image fits my personality	,491	,159	,566	,009
[Heineken] Trust the company	,195	,323	,779	,305
[Heineken] Like the company	,270	,241	,763	,275
[Heineken] Company has credibility	,042	,256	,829	,186

Carlsberg

Rotated Component Matrix^a

	Component		
	1	2	3
[Carlsberg] Knowledge	,169	,688	,166
[Carlsberg] Awareness	,372	,638	,009
[Carlsberg] Recognition	-,008	,666	,276
[Carlsberg] Good quality	,471	,698	,211
[Carlsberg] Consistent quality	,326	,652	,365
[Carlsberg] Trust	,223	,689	,432
[Carlsberg] Word-of-mouth	,707	,496	,184
[Carlsberg] Advice	,736	,371	,115
[Carlsberg] First choice	,712	,362	,058
[Carlsberg] Good buy	,528	,555	,266
[Carlsberg] Quality/Price	,368	,435	,508
[Carlsberg] Good value for money	,280	,363	,527
[Carlsberg] Interesting	,672	,355	,317
[Carlsberg] Consumer image	,683	-,013	,358
[Carlsberg] Image fits my personality	,702	,043	,441
[Carlsberg] Trust the company	,243	,252	,837
[Carlsberg] Like the company	,306	,191	,813
[Carlsberg] Company has credibility	,085	,219	,855